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# The Journal of Educational Psychology

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# PERSONALITY CHARACTERISTICS AND SOCIAL ACCEPTABILITY IN ADOLESCENCE

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It is evident that at any age an acceptable social status is an important requisite for satisfactory personal and social adjustment. Lack of such status frequently makes for misery and unhappiness; whereas attainment of status once lacking may produce marked changes in an individual's personality and feelings of well-being. Inasmuch as emerging interest in social relationships, especially heterosexual relationships, seems particularly characteristic of adolescence, problems of attaining and maintaining social status may be of greater importance at that age.

The purpose of the present study was to obtain measures of social acceptability at different ages through the adolescent period, and also to get judgments from the associates of the subjects as to their personal characteristics. By examination of these data, it was hoped that some new insights into social development in adolescence might be gained, and some evidence obtained as to what particular personal characteristics are associated with, and hence might conceivably foster, social acceptability at these ages.

## TWO EARLIER STUDIES

The study is, of course, not without antecedents in the psychological literature, but only two particularly relevant background studies will be mentioned here. Moreno[6] studied social structure in various school and institutional groups, investigating social relationships from the kindergarten through the eighth grade. The study revealed interesting facts regarding social develop-

ment within this age range, and demonstrated as well the effectiveness of his research technique for studying such problems. The present study presents similar, though not directly comparable data, for the adolescent years.

Tryon's investigation of adolescent personality[14] is especially pertinent. She asked children at the mean age of 12.1 years, and again three years later, to make judgments regarding the personalities of their fellows. Analysis of the interrelations of these personality characteristics was then made in an attempt to arrive at some estimate of the relative social importance of such characteristics in the minds of youngsters. She was especially interested in differences between the two ages in desirability of various traits.

## PROCEDURE OF THE PRESENT STUDY

Though similar to Tryon's study, the present investigation differs in several respects. In the first place, it covers a larger age range, grades VI, IX, and XII being tested.* Second, judgment as to the importance of various personal characteristics was here to be determined not by their relationship to other personal characteristics, but by their association with the social acceptability of the subjects. The 'external' criterion should provide a useful point of reference. Third, the analysis has purposely been kept simple.

In obtaining the data two instruments were used. The first, a "Guess Who" test was patterned after that described by Tryon[14] and by Stoke.[11,†] Its purpose was to obtain information regarding the personalities of the children, and contained some forty items asking for nominations of children who fit particular descriptions, such as "Here is someone who is always cheerful, jolly and good-natured, laughs and smiles a good deal." Descriptions were always in pairs representing polar traits. Thus the

* The present investigation is cross-sectional rather than longitudinal in plan, but this is not necessarily a deficiency. It is conceivable, for example, that temporary 'fads' may affect findings in longitudinal studies more readily than in cross-sectional studies where age samples are taken at the same point in time.

† The "Guess Who" approach is original with neither of these writers, but dates back to the Character Education Inquiry (4, pp. 87–91). Other investigators who have used this device include Symonds and Jackson[13] and Rogers.[8]

mate to the above sample item was: "Here is someone who always seems rather sad, worried or unhappy, who hardly ever laughs or smiles." Similar descriptive statements* were presented representing the twenty pairs of characteristics listed below:

Restless—Quiet
Talkative—Silent
Active in games—Not active in games
Enjoys jokes—Does not enjoy jokes
Friendly—Not friendly
Sociable—Not sociable
Initiates games and activities—Follows in activities
Enjoys a fight—Does not enjoy a fight
Willing to take a chance—Unwilling to take a chance
Neat—Unkempt
Girl likes opposite sex—Girl avoids opposite sex
Boy likes opposite sex—Boy avoids opposite sex
Enjoys jokes on self—Does not enjoy jokes on self
Acts older than age—Acts younger than age
Seeks attention—Does not seek attention
Popular with others—Unpopular with others
Cheerful and happy—Sad and unhappy
Goodlooking—Not goodlooking
Enthusiastic—Listless
Always bossing others—Does not mind being bossed

The number of times a given individual was nominated for a particular description, divided by the number of children who might have rated him, constituted that individual's score on a particular variable.† No distinction was made between ratings of any person by boys and by girls. The distributions of scores so obtained were quite symmetrical. Tryon has presented evidence regarding the reliability of such scores based on test-retest procedure ten days apart with seventh-graders. The reliability coefficients ranged from .45 to .95, with half the coefficients being above .80 and only one-fifth below .60.

The second instrument, based on Moreno's sociometric technique, was for the purpose of determining social acceptability. This blank contained directions asking each child to indicate

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* For an exact statement of the descriptions used see Stoke[11] or, for most of the descriptions, Tryon.[14] The latter source also contains an excellent discussion of the meaning of personality judgments obtained in this fashion.

† In some cases an individual might be nominated for both extremes of a variable, e.g., as being both restless and quiet. When this occurred the difference between the two, indicating the extent to which one extreme exceeded the other, was divided by the number of possible raters.

first and second choices of companions for: (1) occupying the next seat in the classroom, (2) attending the movies, (3) going for a walk, (4) going skating, (5) making things (as model boats, dresses, etc.), (6) playing outdoor games, (7) playing indoor games, (8) studying school work, (9) reading for fun. The only restriction was that the choices must be made from the subject's own grade, not necessarily his own classroom. Any individual could be chosen as many times as desired. An 'acceptability' score for each individual was arrived at by weighting first choices 2, second choices 1, and dividing their sum by the number of potential raters. Several mentions of a particular child by the same person received the same weight as an equal number of mentions by different children. As used in this report 'social acceptability' means social acceptability among one's own sex. Scores were determined in this manner, because it was observed that a certain individual might be exceedingly popular with his own sex but be chosen by none of the opposite sex. In other instances, individuals were popular with both sexes. It was deemed better to have the scores mean the same thing in the case of each individual, hence the restriction to popularity among one's own sex.

The distributions of the social acceptability scores were skewed, with most scores being toward the low end. This is undoubtedly due to the fact that 'repulsion' scores were not obtained. Many of those who were not chosen, are not simply unliked, but actively disliked.* Reliability of such measures of social acceptability seems good. C. W. Hunnicutt, of Syracuse University, for example, used a very similar blank in an investigation as yet unpublished and found that for five groups of sixth-graders, about thirty children to a group, the reliability coefficients based on tests ten days apart were .88, .86, .89, .85, and .92, respectively.

Seven hundred children were studied,—over one hundred of each sex in each of grades VI, IX, and XII. The sample included

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* In another study (of social adjustment in a summer camp) being done under the senior writer's direction, 'dislikes' as well as 'likes' were requested. The distributions of acceptability scores so obtained were symmetrical in shape with about twenty-five per cent of the scores being negative. This procedure seems to have certain advantages over that used in the present study.

all of the sixth-, ninth-, and twelfth-graders in four centralized schools and the twelfth-graders in two similar schools, all in central New York.* The mean ages of the grade groups studied are as follows:

| Grade | VI | IX | XII |
|---|---|---|---|
| Boys | 11.9 | 14.7 | 17.4 |
| Girls | 11.6 | 14.3 | 17.3 |

Inasmuch as various studies (such as the *Harvard Growth Study:* [7], p. 9; [8], p. 212) show that on the average pubescence is reached by girls at about thirteen to thirteen and one-half years of age and by boys about two years later, the present study contrasts groups one of which is largely prepubescent, one pubescent, and one post-pubescent. While the girls at all ages tested are probably more mature than the boys, sex differences in pubescent status are greatest in the ninth grade, more boys than girls in this group being prepubescent.

### SOCIAL ACCEPTABILITY AT GRADES VI, IX, AND XII

The major findings regarding social acceptability are set forth in Table 1. The most striking trend there evident is the increase in heterosexual relationships as age increases. Among the sixth-graders less than a third are chosen by members of the opposite sex, but by the twelfth-grade almost two-thirds are so chosen. A count was also made of those who chose members of the opposite sex. The appropriate figures in Table 1 show that greater increase in such choice occurred between grades VI and IX. Sex differences are also apparent, the boys choosing the opposite sex more frequently. Inasmuch as this finding is different from what might be expected in view of data on comparative age of social maturing of the sexes, it should be pointed out that the subjects had been asked to restrict their choices to their own grade level. Since girls tend to prefer older associates, while boys prefer associates of their own ages ([15], p. 14), the girls may have chosen boys less frequently under the conditions of this study than would have been the case if they had

* The writers are indebted to Principals Clyde Slocum, Wayne Lowe, Stewart Smith, Arthur A. Gates, G. W. Yaple, and H. M. Elsbree, of Cobleskill, Cazenovia, Middleburgh, Port Byron, Hamilton, and Mexico, respectively, for their fine coöperation in this study.

had unrestricted choice. That this is the case is suggested by the fact that girls, but not boys, frequently made notations, such as "He's not in this grade," or "Not a sixth-grader," on their response blanks.

TABLE 1.—CHANGES IN SOCIAL RELATIONSHIPS AT ADOLESCENCE AS SHOWN BY THE PERCENTAGE OF BOYS AND GIRLS OF DIFFERENT GRADE GROUPS WHO CHOOSE MEMBERS OF THE OPPOSITE SEX AS COMPANIONS FOR VARIOUS ACTIVITIES, WHO ARE CHOSEN BY THE OPPOSITE SEX, AND WHO ARE CHOSEN BY NO ONE

| | Grade | | | CR* 6–12 Diff. |
|---|---|---|---|---|
| | VI | IX | XII | |
| Percentage of boys choosing girls | 45.0 | 72.5 | 75.0 | 4.7 |
| Percentage of girls choosing boys | 39.2 | 59.7 | 63.0 | 3.7 |
| Percentage of boys chosen by girls | 31.2 | 49.1 | 65.8 | 5.4 |
| Percentage of girls chosen by boys | 30.8 | 52.4 | 59.7 | 4.6 |
| Percentage of boys chosen by no one | 5.5 | 5.0 | 1.9 | 1.3 |
| Percentage of girls chosen by no one | 2.5 | 3.2 | 4.2 | 0.7 |

* Computed on basis of standard errors, from the tables prepared by Edgerton and Peterson.[2]

The emerging interest in the opposite sex thus demonstrated can be put into proper developmental perspective if viewed in the light of Moreno's findings,[6] and other facts regarding social relationships. Moreno found that first-graders, but not sixth-graders, chose the opposite sex with fair frequency; the trend from the first to the sixth grade was one of decreasing choice

of the opposite sex. Data of other investigators[1,3] have called attention to the so-called 'gang age' which seems to occur typically just prior to pubescence. At this age youngsters tend to associate primarily with their own sex. Thus the general picture of development through the school years is one of association with the opposite sex in early childhood, a gradual withdrawal from opposite-sex contacts in late childhood, and then an emerging interest in heterosexual relationships as development proceeds into adolescence. It is noteworthy that heterosexual adjustment is far from general even in the twelfth grade. Under the conditions of this study, over thirty-five per cent were chosen by none of the opposite sex and over twenty-five per cent made no choices of the opposite sex. A somewhat different picture might be obtained if no restrictions were placed on choices.

Though most children are chosen by some one of their classmates for some activity, in every grade there are individual instances which amount to social tragedy. Each child was asked to choose individuals for nine activities, actually to make eighteen choices, yet from two to five per cent of these children were chosen by no one. Undoubtedly these children, and others chosen only infrequently, represent cases needing immediate attention if best social adjustment is to be fostered.

## CHANGES IN PERSONALITY DURING ADOLESCENCE

The basic data to be considered here are judgments of youngsters by their associates. Sixth-graders rated sixth-graders; ninth-graders rated ninth-graders; and personality characteristics of twelfth-graders were judged by twelfth-graders. This is an important fact to keep in mind because rating devices measure the raters as well as ratees. Some of the differences to be pointed out below may be due to differences in sensitivity of the age groups to various traits as well as to differences in the degree to which a given trait is present at any age. Since a trait can have no great social significance unless associates can recognize it and respond to it, the differences to be presented represent genuine personality differences between age groups, whether the characteristics are inherent in the rater or in the ratee.

Perhaps the simplest way of portraying the age trends and sex differences that exist in the present data is to indicate the per-

centage of each group mentioned as evidencing a particular characteristic. Since the forty items were in polar pairs, this can be accomplished by indicating the percentages evidencing one characteristic of each of the pairs. Instead, for example, of presenting the data for both 'Restless' and 'Quiet' (the first

TABLE 2.—CHANGES IN PERSONAL CHARACTERISTICS DURING ADOLESCENCE AS INDICATED BY THE PERCENTAGE OF EACH GRADE GROUP WHO WERE JUDGED BY THEIR ASSOCIATES AS EVIDENCING CERTAIN CHARACTERISTICS

| | Boys | | | | Girls | | | | Sex Differences* | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | VI | IX | XII | CR 6–12 | VI | IX | XII | CR 6–12 | VI | IX | XII |
| Restless | 50 | 50 | 42 | 1.3 | 30 | 21 | 23 | 1.3 | 20* | 29* | 19* |
| Talkative | 50 | 48 | 58 | 1.2 | 33 | 32 | 37 | 0.4 | *17* | *16* | 21* |
| Active in Games | 57 | 51 | 53 | 0.6 | 43 | 32 | 28 | 2.5 | *14* | 19* | 25* |
| Enjoys Jokes | 58 | 57 | 64 | 0.9 | 37 | 40 | 39 | 0.3 | 21* | *17* | 25* |
| Friendly | 50 | 51 | 56 | 0.7 | 53 | 60 | 55 | 0.2 | −3 | −9 | 1 |
| Sociable | 51 | 47 | 48 | 0.5 | 49 | 62 | 52 | 0.5 | 3 | *−15* | −4 |
| Initiates Games and Activities | 36 | 31 | 44 | 1.2 | 36 | 41 | 27 | 1.4 | 0 | −10 | *17* |
| Enjoys a Fight | 61 | 51 | 52 | 1.3 | 22 | 21 | 26 | 0.8 | 39* | 30* | 26* |
| Willing to Take a Chance | 43 | 53 | 65 | 2.8 | 37 | 42 | 34 | 0.5 | 9 | 11 | 31* |
| Neat and Clean | 41 | 52 | 50 | 1.1 | 66 | 61 | 61 | 0.8 | *−15* | −9 | −11 |
| Likes Opposite Sex | 30 | 36 | 53 | 3.5 | 27 | 40 | 55 | 4.5 | 3 | −4 | −2 |
| Enjoys Joke on Self | 37 | 43 | 57 | 3.1 | 35 | 48 | 45 | 1.5 | 2 | −5 | 12 |
| Acts Older than Age | 22 | 28 | 32 | 1.7 | 39 | 45 | 47 | 1.2 | *−17* | *−17* | *−15* |
| Seeks Attention | 39 | 38 | 40 | 0.1 | 27 | 26 | 28 | 0.2 | *12* | *12* | 12 |
| Popular with Others | 41 | 52 | 65 | 3.6 | 48 | 52 | 49 | 0.2 | −7 | 0 | *16* |
| Cheerful and Happy | 50 | 58 | 60 | 1.5 | 53 | 60 | 50 | 0.4 | −3 | −2 | 10 |
| Good-looking | 33 | 38 | 36 | 0.5 | 38 | 50 | 39 | 0.1 | −5 | −12 | −3 |
| Enthusiastic | 47 | 53 | 60 | 2.0 | 48 | 52 | 53 | 0.8 | −1 | 1 | 7 |
| Bosses Others | 25 | 43 | 30 | 0.8 | 42 | 37 | 35 | 1.0 | *−17* | 6 | −5 |
| No. of Cases | 109 | 120 | 108 | ... | 120 | 124 | 119 | | | | |

* Numbers represent difference between sex-pairs of columns in the table. A minus value indicates girls were more frequently mentioned than boys for a particular trait. Differences marked with an asterisk are three or more times their standard errors; differences printed in italics are between two and three times their standard errors.

pair of items), we have chosen for convenience to give only the facts for 'Restless,' and in the tables have indicated the percentage of each group who received any mention at all* as evidencing that characteristic.

Table 2 contains the essential findings in this phase of the study. Boys appear to have changed a statistically significant† degree in five characteristics. As the age of the groups increases, boys are more frequently mentioned as liking the opposite sex, enjoying jokes on self, being popular with others, being willing to take a chance, and as being enthusiastic. Increasing sensitivity to social situations and increasing social activity are implied in these trends. Girls gained in judged interest in the opposite sex; but beyond this, they showed only slight or no change in characteristics which changed reliably for boys. Girls apparently become less interested in active games with development into adolescence, a finding which is in agreement with other studies.[12]

In the last three columns of Table 2 the results have been presented in such a way as to focus attention upon sex differences. At all ages, boys were judged more frequently than girls to be restless, talkative, active in games, to enjoy a joke, to enjoy fighting, to be willing to take a chance, and to seek attention. Conversely, girls were either mentioned more frequently than boys for the opposite extreme of these characteristics, or tended not to be mentioned at all. At each grade level girls were judged more frequently than boys to act older than their ages. This last point is interesting in connection with the usual view of the earlier emotional and social maturity of girls. Interestingly enough, in spite of this finding, girls are not judged to show greater and earlier interest in the opposite sex, though one analysis of the data did suggest this to be true.‡

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* Unless counterbalanced by an equal or greater number of mentions for the other extreme of the pair.

† CR's of 2.0 or more, indicating chances of a true difference existing to be some ninety-eight out of one hundred in repetitions of the study with similar populations, have been taken in this investigation as indicative of statistical reliability. All critical ratios in this report were based on standard errors computed from the tables prepared by Edgerton and Paterson.[3]

‡ For a completely accurate portrayal of the findings the percentages mentioned for both extreme traits of each pair and the percentages mentioned for neither should be included, but they have been omitted to save

Certain interesting trends are apparent in the sex differences. With increased age there is increasing divergence between the sexes with respect to activity in games and willingness to take a chance, boys showing increasingly greater activity and greater daring as compared with girls as age increases. The data also suggest that as age increases boys take over domination of the adolescent social scene. While at the sixth-grade level girls receive more mention than do boys as being popular with others, at the twelfth-grade level the boys are mentioned much more often than are girls. Further interesting evidences of a sex shift in social initiative with increased age are apparent. At the sixth grade, the sexes are mentioned with equal frequency as "Initiating games and activities;" at the ninth grade the girls are more frequently mentioned (CR 1.7); but at the twelfth grade boys seem to have taken over this social initiative with a sex difference that is statistically reliable. Also at the ninth grade, girls are judged (reliably) more frequently to be 'sociable,' but at the other grades no sex difference exists. This seems to bear out the earlier suggestion that with progress through adolescence boys gradually become the dominant sex socially. The superiority of girls in sociability and in social initiative at the ninth grade may be associated with their earlier pubescence. At this age girls tend to be taller and more fully developed than boys, who on the average reach pubescence later than the ninth grade.

### PERSONALITY CHARACTERISTICS AND SOCIAL ACCEPTABILITY

A third aspect of the study has to do with the relationship between personality characteristics and social acceptability. What personality characteristics are the most popular individuals judged to have, and what are deemed to be the characteristics of the least popular? When interpreting the data here presented it should be pointed out that judgments of characteristics were obtained first, and after these papers were collected choices were made as to desirable companions. A reversal of this procedure

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space. Age trends and sex differences quite similar to those presented here appeared in these analyses also. The data were analyzed also with respect to the means of scores obtained in the fashion described earlier in the paper. They are not presented, however, for reasons mentioned in the Discussion section to follow.

might have created a greater 'halo effect' than probably already exists. Also, it should be remembered that here 'social acceptability' means social acceptability among one's own sex.

The plan in this phase of the study was to set up for each sex and grade, groups composed of the twenty-five per cent most popular and the twenty-five per cent least popular subjects, and to contrast these extreme groups in terms of the characteristics on which judgments had been obtained.* The figures in Tables 3 and 4 represent, for the two sexes, the percentage of the highly acceptable group and the percentage of the least acceptable group who received some mention by their associates as evidencing various characteristics. Thus, for the sixth grade thirty-two per cent of the best liked boys and sixty per cent of the least liked were rated as being restless. This difference is 2.1 times its standard error. The remainder of the Tables 3 and 4 are to be read in similar fashion.

It will be noted that in spite of the few number of cases in the extreme groups, most differences are strikingly large and highly reliable statistically.† An inspection of the Critical Ratio columns of the tables will reveal that practically all of the traits studied bear a substantial relationship to social acceptability. To use as examples those that show greatest differentiation for both sexes and at all grades, it is apparent that the highly accepted person is one who is judged to be popular with others, to be cheerful and happy, to be enthusiastic, to be friendly, to enjoy jokes, and to initiate games and activities. It is also interesting to note that at all ages those who are highly accepted

* A correlational procedure might seem more appropriate here, but the skewedness of the social acceptability scores made the contrasting of extreme groups appear a more reasonable type of analysis. In setting up the extreme groups each sex and grade group of a given school contributed the twenty-five per cent most frequently chosen and the twenty-five per cent least frequently chosen. This seemed more desirable than throwing all scores into a single age-sex distribution and choosing the extremes from that distribution. The writers' scepticism regarding the comparability of scores based on the number of potential raters when groups tested are of different sizes is responsible for the decision to set up the groups in this fashion. This point is returned to in the Discussion section.

† Even more credence can be placed in the differences than is indicated by the CR's, since consistency from age group to age group and between sex groups is marked. Where changes have occurred from age to age group, the consistency of the trend should also be borne in mind.

by their own sex, were judged also to like the opposite sex. The reader can refer to the tables for other differences that are reliable, and in which he may be interested.

TABLE 3.—CHANGES IN DESIRABILITY OF VARIOUS CHARACTERISTICS AT DIFFERENT AGES THROUGH ADOLESCENCE, AS SHOWN BY THE PERCENTAGES OF THOSE OF VARIOUS GRADE GROUPS WHO ARE MOST ACCEPTABLE (HIGH) AND THOSE WHO ARE LEAST ACCEPTABLE (LOW) WHO ARE JUDGED BY THEIR ASSOCIATES TO HAVE VARIOUS CHARACTERISTICS— (BOYS)

| Trait | Grade VI | | | Grade IX | | | Grade XII | | |
|---|---|---|---|---|---|---|---|---|---|
| | High | Low | CR | High | Low | CR | High | Low | CR |
| Restless | 32 | 60 | 2.1 | 57 | 57 | .0 | 46 | 27 | 1.5 |
| Talkative | 48 | 52 | 0.3 | 57 | 43 | 1.1 | 92 | 42 | 4.5 |
| Active in Games | 96 | 20 | 8.5 | 77 | 27 | 4.5 | 73 | 35 | 3.0 |
| Enjoys Jokes | 88 | 44 | 3.7 | 77 | 30 | 4.1 | 92 | 42 | 4.5 |
| Friendly | 96 | 4 | 16.7 | 90 | 20 | 7.7 | 100 | 19 | 10.5 |
| Sociable | 64 | 48 | 1.2 | 70 | 30 | 3.4 | 65 | 31 | 2.6 |
| Initiates Games and Activities | 76 | 8 | 6.7 | 57 | 7 | 4.9 | 96 | 15 | 10.1 |
| Enjoys a Fight | 60 | 48 | 0.9 | 80 | 40 | 3.5 | 62 | 46 | 1.1 |
| Willing to Take a Chance | 84 | 28 | 4.8 | 87 | 30 | 5.5 | 92 | 35 | 5.3 |
| Neat and Clean | 80 | 12 | 6.6 | 73 | 27 | 4.1 | 77 | 31 | 3.8 |
| Likes Opposite Sex | 52 | 12 | 3.4 | 67 | 17 | 4.6 | 92 | 27 | 6.4 |
| Enjoys Joke on Self | 80 | 4 | 8.5 | 67 | 17 | 4.6 | 89 | 27 | 5.8 |
| Acts Older than Age | 32 | 20 | 1.0 | 37 | 17 | 1.8 | 31 | 27 | 0.3 |
| Seeks Attention | 44 | 32 | .6 | 43 | 47 | .3 | 62 | 35 | 2.0 |
| Popular with Others | 92 | 4 | 13.1 | 93 | 13 | 10.4 | 96 | 27 | 7.1 |
| Cheerful and Happy | 96 | 0 | 24.6 | 80 | 27 | 4.9 | 100 | 31 | 7.6 |
| Good-looking | 84 | 4 | 9.6 | 63 | 13 | 4.6 | 66 | 12 | 4.7 |
| Enthusiastic | 92 | 0 | 17.0 | 83 | 7 | 9.2 | 100 | 23 | 9.3 |
| Bosses Others | 24 | 24 | .0 | 43 | 40 | .3 | 42 | 23 | 1.5 |
| Number of Cases | 25 | 25 | .... | 30 | 30 | .... | 26 | 26 | |

A number of writers ([5], p. 54f; [7], p. 636f; [14]) have recently emphasized the importance in adjustment through adolescence of changing values as to what traits are socially important. At

one age a person may have those characteristics that make for popularity at that age and be very popular, but a year or more later may show a marked loss in popularity because new traits

TABLE 4.—CHANGES IN DESIRABILITY OF VARIOUS CHARACTERISTICS AT DIFFERENT AGES THROUGH ADOLESCENCE, AS SHOWN BY THE PERCENTAGES OF THOSE OF VARIOUS GRADE GROUPS WHO ARE MOST ACCEPTABLE (HIGH) AND THOSE WHO ARE LEAST ACCEPTABLE (LOW) WHO ARE JUDGED BY THEIR ASSOCIATES TO HAVE VARIOUS CHARACTERISTICS (GIRLS)

| Trait | Grade VI | | | Grade IX | | | Grade XII | | |
|---|---|---|---|---|---|---|---|---|---|
| | High | Low | CR | High | Low | CR | High | Low | CR |
| Restless | 21 | 52 | 2.6 | 13 | 27 | 1.3 | 35 | 10 | 2.3 |
| Talkative | 38 | 41 | .3 | 50 | 27 | 1.9 | 52 | 21 | 2.6 |
| Active in Games | 66 | 21 | 3.9 | 57 | 17 | 3.5 | 59 | 7 | 5.2 |
| Enjoys Jokes | 59 | 17 | 3.6 | 73 | 20 | 4.9 | 72 | 7 | 6.8 |
| Friendly | 97 | 14 | 11.5 | 93 | 27 | 7.1 | 93 | 21 | 8.0 |
| Sociable | 69 | 21 | 4.2 | 80 | 40 | 3.5 | 83 | 14 | 7.3 |
| Initiates Games and Activities | 76 | 10 | 6.8 | 80 | 17 | 6.3 | 59 | 7 | 5.0 |
| Enjoys a Fight | 17 | 28 | 1.0 | 13 | 13 | 0.0 | 28 | 7 | 2.2 |
| Willing to Take a Chance | 76 | 24 | 4.6 | 70 | 27 | 3.7 | 62 | 17 | 3.9 |
| Neat and Clean | 100 | 55 | 4.9 | 93 | 33 | 6.1 | 83 | 31 | 4.7 |
| Likes Opposite Sex | 69 | 17 | 4.7 | 67 | 17 | 4.6 | 83 | 28 | 5.1 |
| Enjoys Joke on Self | 72 | 7 | 6.8 | 60 | 23 | 3.1 | 72 | 10 | 6.2 |
| Acts Older than Age | 45 | 28 | 1.4 | 57 | 40 | 1.3 | 41 | 66 | 1.9 |
| Seeks Attention | 31 | 35 | .3 | 27 | 30 | .3 | 35 | 21 | 1.2 |
| Popular with Others | 86 | 14 | 8.0 | 93 | 13 | 10.4 | 90 | 17 | 8.0 |
| Cheerful and Happy | 83 | 31 | 4.7 | 90 | 20 | 7.7 | 83 | 21 | 6.0 |
| Good-looking | 83 | 10 | 8.1 | 80 | 27 | 4.9 | 59 | 17 | 3.6 |
| Enthusiastic | 90 | 10 | 10.0 | 83 | 20 | 6.3 | 90 | 21 | 7.3 |
| Bosses Others | 45 | 45 | 0.0 | 40 | 23 | 1.4 | 52 | 21 | 2.6 |
| Number of Cases | 29 | 29 | .... | 30 | 30 | .... | 29 | 29 | |

have assumed importance in the eyes of his age mates—traits which that person may not then possess. Thus age trends, such as are apparent in the present data, may assume considerable

importance. Among items showing such trends are 'Talkative,' 'Seeking attention,' 'Bossing others,' and 'Restless.' Of these the first three do not differentiate between the highly acceptable and those not accepted at the sixth grade, but do differentiate at the twelfth grade. The agreement between the sexes add to the degree of confidence that can be placed in the statistical reliability of these trends. In the case of restlessness, it is noteworthy that a reversal has occurred. At the sixth-grade level a reliably larger proportion of the socially 'unaccepted' group were judged to be restless, but by the twelfth-grade level the 'popular' group were more often judged to be restless. Again, the same trends are apparent in both sex groups. It would seem from these findings that at the twelfth-grade level, more than at the sixth-grade, the highly accepted adolescent tends to be the active, socially agressive extrovert.

Other age trends are apparent in the data, though these characteristics differentiate reliably at all ages. For both sexes, good looks seem less markedly associated with acceptability as age increases. For boys, activity in games does not differentiate between the acceptable and those not accepted as well at the twelfth-grade as at the sixth-grade level. On the other hand, liking the opposite sex seems to bear a closer relationship at adolescence than earlier. For girls, enjoying a joke and being sociable are associated with acceptability at all ages, but more clearly in adolescence. Again, the increased importance in adolescence of active social participation and greater social sensitivity, such as responding to humors, is suggested.

There is danger in evaluating findings of this sort that differences will be studied and emphasized at the expense of essential similarities. In order to provide proper perspective, it will be worth while to examine the relative rank of these traits in terms of their association with acceptability. The difference between the percentage of the most acceptable group and the percentage of the least acceptable group who evidenced a trait determined the rank of the trait. When this is done we find that the five traits most highly and least related to acceptability at the sixth- and at the twelfth-grade levels are as follows (the figures in parentheses are computed from Tables 3 and 4, and indicate differences between percentages for high and low acceptability groups):

*Traits Having Highest Association with Acceptability*

| Boys | | Girls | |
|---|---|---|---|
| Sixth Gr. | Twelfth Gr. | Sixth Gr. | Twelfth Gr. |
| Cheerful (96) | Friendly (81) | Friendly (83) | Popular (73) |
| Enthusiastic (92) | Initiates games (81) | Enthusiastic (80) | Friendly (72) |
| Friendly (92) | Enthusiastic (77) | Goodlooking (73) | Enthusiastic (69) |
| Popular (88) | Cheerful (69) | Popular (72) | Sociable (69) |
| Goodlooking (80) | Popular (69) | Initiates games (66) | Enjoys jokes (65) |

*Traits Having Lowest (or Negative) Association with Acceptability*

| | | | |
|---|---|---|---|
| Enjoys fight (12) | Seeks attention (27) | Bosses others (0) | Bosses others (31) |
| Acts older (12) | Restless (19) | Talkative (−3) | Talkative (31) |
| Seeks attention (12) | Bosses others (17) | Seeks attention (−4) | Restless (25) |
| Bosses others (0) | Enjoys fight (16) | Enjoys fight (−11) | Enjoys fight (21) |
| Talkative (−4) | Acts older (4) | Restless (−31) | Seeks attention (14) |
| Restless (−28) | | | Acts older (−25) |

Similarity in relative importance of various traits at grades VI and XII (also for grade IX, though not shown) is obvious from the above list. In fact, for boys the five traits highest at the sixth grade are, with one exception, the same for the twelfth grade. 'Initiates games' moved from a rank of eight at the sixth to second place at the twelfth grade; 'goodlooking' dropped from fifth place at the sixth grade to ninth place at the twelfth grade. Among the lowest five traits for boys, the overlap is also decided, only one characteristic, 'talkative,' being among the lowest five in the sixth but not in the twelfth grade. From next to the bottom at the sixth grade, it had moved up to a middle position by the twelfth. For girls, the similarity at the sixth and twelfth grade among the extremes is also clear. 'Initiates games' and 'goodlooking' have, however, dropped from among the highest five at the sixth grade to ranks of eleventh and thirteenth place (out of nineteen) by the twelfth. 'Sociable' and 'enjoys jokes' have climbed from ninth and twelfth places, respectively, at sixth grade to among the first five at the twelfth grade.

It will be seen that although 'bosses others,' 'restless,' and 'seeks attention' are more closely related to acceptability at the twelfth grade than at the sixth, they are, at all ages, among those traits showing least association with acceptability. But in some instances (best shown by 'restlessness') the change has been from a negative relationship at the sixth grade to a fair positive relationship at twelfth, in spite of no great change in rank. Of course, these comments simply illustrate in another fashion trends already pointed out.

## DISCUSSION

It is interesting to compare the results of the present study with the findings of the study by Tryon. It would seem reasonable to expect that traits which are most markedly approved will be found more frequently among those children who are most frequently chosen by their associates as possible companions, i.e. among those children who have a high degree of social acceptability. Though the present findings agree to a considerable degree with Tryon's summary ([14], Table 13), certain differences appear. For example, Tryon states that the most striking change occurred in the case of boys: they "completely reversed their evaluation" of unkemptness, approving it at twelve years of age, markedly disapproving it at fifteen. The present study shows that, at the sixth, ninth, and twelfth grades, those boys who were most frequently chosen as companions by their classmates were also more frequently mentioned as being "neat and clean." Being talkative is judged by Tryon to be approved by twelve-year-old boys, but to be less approved at fifteen. In the present study being talkative was unrelated to social acceptability at the sixth grade, but at the twelfth grade the highly acceptable boys were mentioned as being talkative twice as frequently as were those low in acceptability.

While such differences in findings suggest the need for further verification of the California research, it should be clear also that the lack of conformity may be due to the fact that our subjects were eastern, rural (or village) children who were probably of a lower socio-economic status than the urban California subjects. The differences between the findings may be due to differences in the adolescent mores of the two populations studied. Tryon recognizes that values may differ among various subcultures and that her specific findings may not be generally applicable. It is also possible that if socio-economic status or other factors could have been held constant different relationships might obtain. In any event, both studies agree in one major conclusion: at different ages through adolescence different values are held as to the desirability of various personal characteristics. However, the present writers are of the opinion that, perhaps, neither study has included those characteristics

(such as specific social skills) which show greatest change in importance during adolescence.

A second point to be mentioned relates to the desirability of scoring such instruments as the "Guess Who Test" and the "Social Acceptance Blank" by dividing the number of times a person is mentioned or chosen by the number of possible raters in the group. This procedure is frequently used to get presumably comparable scores from groups of various sizes. The group from which mentions are made, however, may be quite different psychologically from what appears objectively as determined by simple counting of the number of potential raters or the number within the room at the time of testing. In working with these data the writers became so sceptical of this procedure that all results were reworked, and have been presented here in terms of percentages, to avoid any artifact due to this scoring procedure. An example of the sort of results obtained will illustrate this point. The distributions of scores on the "Guess Who Test" had much larger standard deviations at the twelfth grade as compared to the sixth. Since the size of the class groups tended to get smaller with age, it appeared as though psychologically the groups may have been relatively constant yet the '*N*' used in computing scores became smaller. The result would be more extreme scores, and larger standard deviations, at the higher grades.

A final point. The instruments employed in the present investigation have seemed useful in providing general descriptions of certain aspects of adolescent development. They are also useful to teachers as means of gaining insights into the personalities of individuals within a classroom. The senior writer has used both the "Social Acceptance Blank" and the "Guess Who Test" in a variety of classroom situations in addition to those of the present study, and has been impressed with the way in which teachers react to them. The process of tabulating opinions of children toward one another, and seeing the tallies pile up in various categories, or fail completely to appear, is an experience which, in the writer's opinion, results in a closer examination of the data and makes the resulting scores much more meaningful to teachers than are the scores of personality tests obtained in the usual fashion. Such meaningfulness, it is to be hoped, will

result in greater motivation on the part of teachers to do something to promote the development of those needing attention.*


## SUMMARY

Social acceptability scores and judgments as to personality characteristics of seven hundred six-, ninth-, and twelfth-graders were studied to determine trends during adolescence (*a*) in social acceptability, (*b*) in various personality characteristics, and (*c*) in the relationship between social acceptability (in this study, social acceptability among one's own sex) and the various personality traits studied. The findings may be summarized very briefly as follows, subject, of course, to the limitations imposed by the conditions of the investigation:

(1) Emerging interest in heterosexual relationship from the sixth to twelfth grade was clearly evident, in terms of percentage choosing and being chosen by the opposite sex as possible companions for various activities.

(2) Heterosexual adjustment was far from general even at the twelfth grade, some thirty-five per cent not being chosen by the opposite sex and about twenty-five per cent making no opposite sex choices. A few, about three to five per cent, were chosen by no one of either sex even under conditions where each child made up to eighteen different choices.

(3) With increased age boys were more frequently judged by their associates to show increased liking for the opposite sex, to enjoy jokes on self, to be popular with others, and to be willing to take a chance. Girls were considered to show greater interest in the opposite sex, and less interest in active games as they grow older.

(4) Sex differences indicated boys to be more restless, talkative, active in games, to enjoy a joke, to enjoy fighting, to be more willing to take a chance, and to seek attention more than girls.


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* The senior writer is at present directing a controlled-group investigation in the promotion of personal-social adjustment at the ninth-grade level. A variety of data, including the sort presented in this paper, has been obtained at the beginning, and will be collected at the end, of a six-month program designed to promote social adjustment. It is hoped that the findings will give some indication as to the extent to which regular classroom teachers can contribute to the social development of children, and also provide additional insights into the concomitants of social acceptability.

Girls were considered to act older than their ages more frequently than were boys.

(5) The evidence suggested that in early adolescence (ninth grade) the girls tend to be the more active of the sexes socially (are more often judged to be 'sociable' and 'to initiate activities') but by later adolescence (twelfth grade) boys tend to dominate the social scene. Then they were judged more frequently than girls to be popular and to initiate games and activities.

(6) Most personality characteristics studied showed substantial relationships with social acceptability. Those most acceptable were judged more frequently to be popular, cheerful and happy, enthusiastic, friendly, to enjoy jokes, to initiate games and activities.

(7) With development into adolescence changes in relationships of certain traits to social acceptability were apparent. The socially acceptable at the twelfth grade tended to be the active, socially aggressive extrovert more than was true of the sixth. Though related to acceptability at all ages, being 'good-looking' was not so closely related to acceptability at the twelfth grade as at the sixth. For boys, 'liking opposite sex' and, for girls, 'being sociable' and 'enjoying a joke' were more closely related to acceptability at the twelfth grade.

(8) The present findings imply that certain traits (neatness, talkativeness) have social stimulus values different from those reported by Tryon. Both studies agree, however, in indicating that during adolescence values change as to the social importance of various characteristics.

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# THE EFFECT OF POSITIVE AND NEGATIVE GUIDANCE UPON MAZE LEARNING IN CHILDREN

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## INTRODUCTION

The purpose of the present experiment was to compare the effectiveness of positive and negative guidance for maze learning in children. The positive guidance consisted of informing the subject whenever he made a correct response; the negative guidance involved informing him whenever he made an incorrect response. In both cases the guidance was effected by means of a bell signal, which was given for correct or incorrect responses, respectively, in the two experimental conditions. As reference to the experimental literature will show, the problem as to the relative value of positive and negative guidance has been studied by a number of investigators with college students as subjects, but up to the present no such study has been performed with children.

The first investigation of these two types of guidance is Wang's[9] study of the influence of verbal tuition upon stylus maze learning. In this experiment the two methods were termed the 'method of instruction' and the 'method of information' corresponding to positive and negative guidance, respectively. In general, Wang found that although both methods of guidance materially aided maze learning, the instruction or positive method was superior according to all criteria. Recently, considerable investigation of the relative effectiveness of positive and negative guidance has been carried on in the field of punchboard maze learning. In the experiments of Tolman, Hall and Bretnall,[8] Muenzinger (with Pattern *A*),[3] Hulin and Katz[2] and Silleck and Lapha[6] it was found that learning with the bell signal for correct responses was superior to learning with the bell signal for incorrect responses, and that therefore positive guidance is superior to negative guidance for this type of maze

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learning. The problem has also been studied by Porter and Hall[5] with a multiple choice apparatus, in which the subjects had to make a series of choices between two telegraph keys. For one group of subjects the light flashed above the correct key whenever a response was correct; for the other group it flashed above the incorrect key whenever a response was incorrect. Porter and Hall found that on every trial the 'Light Right' group was superior to the 'Light Wrong' group. In another recent investigation Porter aimed to compare these forms of guidance not only for performance during learning, but also for retention as measured by a recognition test given immediately after the practice was concluded. Of the two groups which concern us here, one had the correct number of a pair emphasized by the flashing of a light upon it as soon as a key had been pressed (positive guidance); the other had the incorrect number thus emphasized (negative guidance). The former group was superior in number of errors made during eight trials, for each of two fifteen-pair series, but on the recognition test the two groups made approximately equal scores.

As this review of the experimental literature shows the results of almost every investigation which deals directly with the problem favor the conclusion that for adults positive guidance is superior to negative guidance as far as its effects upon learning are concerned. This inference holds good whether the guidance in question is specific verbal information in stylus maze learning, or is a bell signal for right or wrong in punchboard maze learning, or is a light functioning as an emphasizer in a multiple-choice situation.

## METHOD

*Subjects.*—The subjects of the experiment were sixty-four children ranging in age from six to ten and in school grades from I*A* to VI*A*. Thirty-five of the subjects were girls and twenty-nine were boys. Almost all of the children were members of the Olivet Memorial Church Sunday School. The others were friends of the members who had been brought along so that they could "play the game too," as the children termed it.

*Apparatus.*—The apparatus was a modification of the punchboard maze which Adams[1] used in her research on methods of serial rote learning. Adams' maze contained thirty pairs of

holes which were arranged in three straight rows of ten pairs each instead of being scattered irregularly over the board as in Tolman's maze. In order, however, to make the learning task sufficiently easy for young children, the present maze contained only fifteen pairs of holes which were arranged in one straight row of pairs extending down the length of the board. The maze was twenty-three and one-half inches long, seven and three-fourths inches wide, and one-half inch thick, and was mounted on a base of the same thickness. It was painted a dull black and the edges of the holes were circled in white so that they would stand out distinctly against the dark background. A time clock was used to record the time for each trial.

Among the reasons for the selection of a punchboard maze of this type were the following: in the first place, punchboard mazes—as Tolman, Muenzinger and others have shown—constitute excellent material for comparing the efficacy of positive and negative guidance, or of emphasis upon right and wrong responses. Such mazes present to the subject a series of choices. At each choice point two responses, and two only, are possible, and it is a very simple matter to inform the subject which response is right, or wrong, as the case may be. Furthermore, in such mazes it is impossible for the subject to discover for himself which responses are correct. Hence, he is entirely dependent upon the information given him by the experimenter and must attend to it and be guided by it at all times. In addition, a punchboard maze of the type used is exceptionally suitable for work with young children. Unlike a stylus maze, it permits the use of vision, which helps to make the children regard the mastery of it as a kind of game. The fact that the task is novel, and is motor in nature are also points of advantage.

Adams employed five forms of maze pattern. For the present experiment, her Form A was selected, and from it three different patterns were constructed. Adams' original pattern was:

L L R L R R R L R L

The three patterns used in the present experiment were:

Form *A*—L L R L R R R L R L L R
Form *B*—R R L L R L R L L R R L
Form *C*—L R L R R L L R R L R L

The letters 'L' and 'R' indicate whether the correct hole of

each pair is on the subject's left as he faces the board or on his right, respectively. The three forms were intended to be as different as possible and equally devoid of any easily memorized pattern.

Different lengths of maze were used for children of different ages. These different lengths were initially assigned as follows: to children aged six and seven years, the first six pairs of holes of each of the three forms; to children aged eight and nine years, the first eight pairs of holes; and to children aged ten and eleven years, the first ten pairs of holes.

### PROCEDURE

The subjects worked in the children's playroom of the Olivet Memorial Church, a room with which most of them were familiar, and in which they had played at one time or another. Each child learned all three maze forms: one for preliminary practice, one with positive guidance and one with negative guidance. The three maze forms were rotated for each of the three conditions so as to control the factor of possible differences in difficulty. Similarly, the two experimental conditions of positive and negative guidance were rotated, half of the subjects having the positive condition first and the other half the negative.

When the child came for the first session, he was told that the experimenter wished to see how well he could learn to 'play a game.' He was further informed that the nature of the investigation was in reality a contest between the boys and girls, and that the experimenter desired to see whether the boys could learn to 'play the game' more accurately and quickly than the girls. A party was to be given for the group who won the contest. The children were very enthusiastic and eager to 'play the game' with the experimenter.

The child was seated at a small table opposite the experimenter, and the maze, covered by a piece of dull black cardboard, was placed before him. He was given a stick with a pointed end (similar to a skewer) with which to punch the holes. The cardboard was moved so as to expose the desired number of holes and the following instructions were read to the subject:

"Here are six pairs" (the number varied according to the age of the child) "of holes into each of which you can put this stick." (The subject was to count them at this point.) "Only one hole in each pair is the right one. I

want you to go through the six pairs and put the stick into the hole which you think is the right one. If it is the right one I will tell you so, and you are to go on to the next pair. If it is the wrong one, I shall say 'wrong' and you are to correct it. I want to see how well you can learn this. Remember you must be able to go through the six pairs without any mistake twice in a row."

After the instructions had been given, the child was asked whether he understood what had been read to him and was then required to tell the experimenter what was going to take place. As soon as his comprehension was assured, the clock was started and he was told to go ahead, beginning with the pair of holes nearest him, and working towards the experimenter. An interval of fifteen seconds was introduced between trials, and during this period the maze was covered by the cardboard. The practice continued until the subject had achieved two trials in succession without error, which was the criterion of learning employed. An error was considered to have been made if the child placed the skewer in the wrong hole, or touched the stick to the wrong hole unless he corrected himself spontaneously. The entire learning period did not exceed fifteen minutes. After the child had learned the maze or 'won' as the children called it, he was rewarded with a piece of candy which he was permitted to choose for himself from a large box. If the subject learned the practice form in seven trials or less, he was given a maze of the length allotted to the next highest age group to learn, on the two experimental conditions to follow. For example, if a child of seven learned in five trials the practice form consisting of six pairs of holes, he was given forms consisting of eight holes to learn with positive and negative guidance. If a child aged ten or eleven learned the ten-hole form in seven trials or less, he worked later with forms utilizing the first twelve pairs of holes.

The first experimental condition came one week after the preliminary practice, and the second experimental condition one week after that. The procedure employed for these two experimental conditions was identical with that described above for the preliminary practice except that the subject was informed whenever he had made a correct response (in the positive guidance condition) or an error (in the negative guidance condition) instead of being given both kinds of information (as in the preliminary practice). The exact nature of the positive and negative guidance will be clear from the instructions reproduced below.

For learning with positive guidance the child was instructed as follows:

"Every time you put the stick in the right hole I will ring a bell. If you are wrong I will not ring the bell and I won't say anything either. So every time you hear the bell ring, you will know that you have put the stick in the right hole. If you don't hear the bell ring, you will know that you have made a mistake and you must correct it."

For learning with negative guidance the children were instructed in the following manner:

"Every time you put the stick in the wrong hole I will ring the bell. If you are right I will not ring the bell and I won't say anything either. So every time you hear the bell ring you will know that you have made a mistake and you are to correct it. If you don't hear the bell ring you will know that you have put the stick in the right hole."

## RESULTS

*The Group as a Whole.*—Table I shows that according to all three criteria of errors, trials and time, learning with positive guidance was superior to learning with negative guidance. For the whole group of sixty-four subjects, the average scores were as follows: for learning with positive guidance, 25.78 errors, 11.64 trials and 273.59 seconds of time. For learning with negative guidance, 33.66 errors, 14.58 trials and 352.02 seconds of time. The critical ratios (see Table IV) are 2.7, 2.5 and 2.6 for the difference in errors, trials and time, respectively. Hence, there are more than ninety-nine chances in one hundred that a true difference exists in favor of the learning with positive guidance. Furthermore, forty-five, or seventy-two per cent, of the subjects made fewer errors with positive guidance, whereas only eighteen, or twenty-eight per cent, of the subjects made fewer errors with negative guidance.

*Age Groups.*—Table I also shows that for every one of the five age groups positive guidance was superior to negative guidance according to all three criteria of learning. Likewise, a majority of the subjects in every age group made fewer errors with the positive guidance. The difference in favor of the positive guidance appears to have been most pronounced with the youngest, the six-year-old group.

*Maze Lengths.*—Similarly, inspection of the data obtained for the different lengths of maze (Table II) regardless of the age

of the subjects, discloses that the average scores for errors, trials and time are superior for the positive guidance condition and that a majority of the subjects in each maze-length group found

TABLE I.—GIVING THE AVERAGE NUMBER OF ERRORS, TRIALS AND TIME FOR PRELIMINARY, POSITIVE AND NEGATIVE CONDITIONS AND FOR FIRST AND SECOND EXPERIMENTAL CONDITIONS FOR DIFFERENT AGES AND FOR THE TOTAL GROUP

| Age Group | No. | Preliminary | | | Positive Guidance | | | Negative Guidance | | |
|---|---|---|---|---|---|---|---|---|---|---|
| | | Errs. | Trs. | Time | Errs. | Trs. | Time | Errs. | Trs. | Time |
| Age 6..... | 14 | 24.07 | 10.14 | 210.14 | 26.24 | 12.64 | 260.14 | 41.50 | 18.00 | 374.29 |
| 7..... | 11 | 15.09 | 8.09 | 179.00 | 20.82 | 10.09 | 224.45 | 26.18 | 12.63 | 297.18 |
| 4..... | 14 | 34.64 | 14.51 | 346.93 | 25.86 | 11.57 | 274.43 | 28.93 | 13.43 | 337.43 |
| 9..... | 13 | 28.69 | 12.08 | 302.23 | 23.31 | 10.31 | 257.38 | 28.77 | 12.00 | 286.46 |
| 10..... | 12 | 39.33 | 14.75 | 411.08 | 32.42 | 13.42 | 351.50 | 42.17 | 16.50 | 464.33 |
| Total Group | 64 | 28.61 | 12.02 | 291.09 | 25.78 | 11.64 | 273.59 | 33.66 | 14.58 | 352.02 |

| Age Group | No. of *S*'s Making Fewer Errs. on Pos. | No. of *S*'s Making Fewer Errs. on Neg. | Experimental 1st Condition | | | Experimental 2nd Condition | | |
|---|---|---|---|---|---|---|---|---|
| | | | Errs. | Trs. | Time | Errs. | Trs. | Time |
| Age 6..... | 12 | 2 | 32.36 | 14.29 | 315.22 | 35.36 | 15.93 | 319.22 |
| 7..... | 7 | 3* | 23.36 | 12.36 | 283.18 | 23.63 | 10.36 | 238.45 |
| 8..... | 9 | 5 | 28.50 | 13.07 | 342.71 | 26.29 | 11.93 | 269.14 |
| 9..... | 9 | 4 | 28.54 | 12.00 | 287.77 | 23.54 | 10.31 | 256.08 |
| 10..... | 8 | 4 | 36.25 | 13.83 | 391.17 | 38.33 | 16.08 | 424.67 |
| Total Group | 45 | 18* | 29.67 | 13.09 | 321.67 | 29.76 | 13.12 | 304.05 |

* One subject had the same number of errors with positive and negative guidance.

that condition more effective for error elimination. The superiority of the positive guidance is greatest for the shortest maze length, which was assigned to the youngest subjects.

*Boys and Girls.*—Finally, computation of the means for boys and girls separately (Table III) shows that positive guidance for both sexes was superior to negative guidance according to all criteria. Likewise, a greater proportion of both boys and girls made fewer errors under the positive condition. It is also worth noting that the performance of the girls surpassed that of the boys with respect to errors, trials and time, under both the preliminary and the two guidance conditions.

TABLE II.—GIVING THE AVERAGE NUMBER OF ERRORS, TRIALS AND TIME FOR PRELIMINARY, POSITIVE AND NEGATIVE CONDITIONS AND FOR FIRST AND SECOND EXPERIMENTAL CONDITIONS FOR DIFFERENT MAZE LENGTHS

| Maze Lengths | No. | Preliminary | | | Positive Guidance | | | Negative Guidance | | |
|---|---|---|---|---|---|---|---|---|---|---|
| | | Errs. | Trs. | Time | Errs. | Trs. | Time | Errs. | Trs. | Time |
| 6 | 14 | 28.57 | 12.93 | 271.57 | 21.57 | 11.50 | 227.64 | 31.71 | 15.64 | 320.00 |
| 8 | 35 | 26.60 | 11.40 | 273.14 | 26.11 | 11.60 | 272.06 | 32.40 | 13.91 | 332.43 |
| 10 | 11 | 39.18 | 14.73 | 412.64 | 27.64 | 12.36 | 320.73 | 36.36 | 15.00 | 418.45 |
| 12 | 4 | 17.25 | 6.75 | 182.25 | 32.50 | 10.50 | 320.00 | 44.00 | 15.50 | 452.75 |

| Maze Lengths | No. of *S*'s Making Fewer Errs. on Pos. | No. of *S*'s Making Fewer Errs. on Neg. | Experimental 1st Condition | | | Experimental 2nd Condition | | |
|---|---|---|---|---|---|---|---|---|
| | | | Errs. | Trs. | Time | Errs. | Trs. | Time |
| 6 | 9 | 4* | 25.21 | 13.93 | 292.14 | 28.07 | 13.21 | 259.79 |
| 8 | 26 | 9 | 30.31 | 25.09 | 322.03 | 28.17 | 12.26 | 282.46 |
| 10 | 7 | 4 | 30.18 | 12.64 | 353.36 | 33.82 | 14.73 | 385.72 |
| 12 | 3 | 1 | 42.25 | 12.25 | 393.25 | 34.25 | 13.75 | 379.50 |

* One subject had the same number of errors with positive and negative guidance.

*First and Second Experimental Conditions.*—As we have seen, positive guidance was superior to negative guidance for the group as a whole, for every age group, for every different length of maze, and for both boys and girls considered separately.

Another possible comparison is that between the first and second experimental condition, regardless of the kind of guidance

TABLE III.—GIVING THE AVERAGE NUMBER OF ERRORS, TRIALS AND TIME FOR PRELIMINARY, POSITIVE AND NEGATIVE CONDITIONS AND FOR FIRST AND SECOND EXPERIMENTAL CONDITIONS FOR BOYS AND GIRLS SEPARATELY

| | No. | Preliminary | | | Positive Guidance | | | Negative Guidance | | |
|---|---|---|---|---|---|---|---|---|---|---|
| | | Errs. | Trs. | Time | Errs. | Trs. | Time | Errs. | Trs. | Time |
| Boys..... | 29 | 32.24 | 13.14 | 317.41 | 27.07 | 12.34 | 283.87 | 36.78 | 16.93 | 395.52 |
| Girls..... | 35 | 25.60 | 11.09 | 269.29 | 24.71 | 11.06 | 265.20 | 29.40 | 12.63 | 315.97 |

| | No. of *S*'s Making Fewer Errs. on Pos. | No. of *S*'s Making Fewer Errs. on Neg. | Experimental 1st Condition | | | Experimental 2nd Condition | | |
|---|---|---|---|---|---|---|---|---|
| | | | Errs. | Trs. | Time | Errs. | Trs. | Time |
| Boys..... | 22 | 6* | 31.45 | 14.00 | 327.07 | 34.41 | 15.28 | 352.41 |
| Girls..... | 23 | 12 | 28.20 | 12.34 | 317.20 | 25.91 | 11.34 | 263.93 |

* One subject had the same number of errors with positive and negative guidance.

TABLE IV.—GIVING THE MEANS AND STANDARD DEVIATIONS FOR BOTH EXPERIMENTAL CONDITIONS AND FOR ALL CRITERIA OF LEARNING, THE DIFFERENCES BETWEEN THE TWO CONDITIONS, AND THE RELIABILITY OF THE DIFFERENCES

| POSITIVE GUIDANCE | TRIALS | TIME | ERRORS |
|---|---|---|---|
| Mean..... | 11.64 | 273.7 | 25.78 |
| SD dis..... | 5.6 | 141.11 | 13.6 |
| SD mean..... | .7 | 17.63 | 1.7 |
| NEGATIVE GUIDANCE | | | |
| Mean..... | 14.58 | 352.0 | 33.66 |
| SD dis..... | 7.4 | 198.34 | 18.6 |
| SD mean..... | .92 | 24.79 | 2.3 |
| POSITIVE-NEGATIVE GUIDANCE | | | |
| Difference..... | 2.9 | 78.3 | 7.88 |
| SD difference..... | 1.2 | 30.42 | 2.9 |
| Critical Ratio..... | 2.5 | 2.6 | 2.7 |
| Chances in 100 for a true difference. | 99.4 | 99.5 | 99.7 |

employed. Inspection of the data in Tables I, II and III shows that there is no reliable or consistent difference between the two conditions. Indeed, for the group as a whole the learning scores under the two conditions are almost identical.

This result is of interest in that one might expect either that some factor such as practice effect might have caused better scores under the second experimental condition, or, conversely, that such a factor as decrease in motivation might have brought about poorer scores at that time. Apparently, however, the only variable with occasioned large and consistent differences in the learning scores obtained was the kind of guidance which was employed. Incidentally, it may be noted that it is not possible to compare the scores on the preliminary maze form with those under the two experimental conditions. In the first place, many subjects learned a shorter and, therefore, an easier maze at the preliminary practice. Second, during the preliminary learning, the subjects were informed with respect to both right and wrong reactions, whereas during the subsequent experimental conditions the information given was of a positive or negative character only.

## DISCUSSION OF RESULTS

The results show that positive guidance was superior to negative guidance, not only for the group as a whole, but also for all five age groups, for all of the four maze length groups, and for the boys and girls taken separately. These results are in agreement with those of Tolman, Hall and Bretnall,[8] Silleck and Lapha,[6] Hulin and Katz,[2] Porter and Hall,[5] and Porter,[4] whose experiments with adults we have already described. Although in the present experiment none of the critical ratios between the positive and negative conditions were sufficiently large to indicate complete statistical reliability, the consistency of the results, together with their agreement with the findings of other experiments, strongly suggest that they may be accepted as valid.

As to why positive guidance should be superior to negative guidance, various explanations are possible. Tolman, as we have already seen, found that for learning a punchboard maze a bell signal for right responses was more favorable than was a signal for wrong responses. As Tolman points out, the bell not only signalled to the subject whether a response just made was right or wrong, but at the same time emphasized to him

the right or wrong hole of the pair. In explanation of his results, Tolman[8] says: "And, if we may envisage learning as consisting in the building up of little subordinate gestalts in which the one hole of each pair is to be set off against the other hole of the pair, this is perhaps just what we might expect. For it would seem quite reasonable that if the positive emphasis, or accent, is on the to-be-selected hole, learning should be easier than when this positive emphasis or accent is on the to-be-avoided hole." If one accepts Tolman's views, one may conclude that in learning it would be more profitable to know when one is right than to know when one is wrong, and the superiority of positive over negative guidance might thus be accounted for. Both Hulin and Katz[2] and Silleck and Lapha[6] also found that "the sounding of a bell accompanying right responses is a more effective condition for learning than sounding of a bell accompanying wrong responses," but they give no explanation of their results. Porter and Hall[5] concluded that "the previously found result that emphasis for correct responses facilitates learning more than emphasis for incorrect responses" (as demonstrated by the work of Tolman *et al.*, Silleck and Lapha, and Hulin and Katz) "is even more firmly established as a definite fact." These writers also fail to give any interpretation of their data. However, they make one suggestion worth noting; namely, that from a practical viewpoint it would seem to be a wise procedure to follow an incorrect response by the correct one, thus helping to fixate the correct reaction. Porter[4] in his more recent experiment does offer an explanation for the superiority of learning with positive guidance. He suggests that "during the initial stages of learning, before the subject is able to verbalize that 'this number is correct' and 'that number is wrong,' he learns that something happens in connection with one number and not the other." Some of the subjects stated that during this period a number which had been emphasized seemed to stand out, to become "more perceptually distinct." Such a number tended to be responded to whether or not it could be identified as right or wrong. In so far as these facts are applicable, emphasis on correct rather than incorrect responses should result in fewer errors during learning.

Another type of explanation of the superiority of positive guidance involves resort to the 'Law of Effect.' According to Thorndike,[7] 'Right' and 'Wrong' for correct and incorrect

responses function, respectively, as a reward and a punishment. In his earlier statements of his well-known 'Law of Effect' ([7], p. 176), he writes: "When a modifiable connection between a situation and a response is made and is accompanied or followed by a satisfying state of affairs, that connection's strength is increased. When made and accompanied or followed by an annoying state of affairs, its strength is decreased." This statement suggests that the fundamental effect of reward and punishment, and so of positive and negative guidance, might be expected to be approximately equal. Recently, however, Thorndike ([7], p. 311) has changed his law to read: "A satisfying after-effect which belongs to a connection can be relied on to strengthen the connection. An annoying after-effect under the same conditions has no such uniform weakening effect. In certain cases, known by general observation or displayed in experiments such as those of Hoge and Stocking and of Warden and Aylesworth, an annoying after-effect does weaken the tendency which produces it. When it does its method of action is often, perhaps always, indirect. That is, the person or animal is led by the annoying after-effect to do something else to the situation which makes him later less likely to follow the original connection." Since in the present experiment the subjects in the negative guidance condition corrected every error as soon as they made it, the fact that they could and did learn under this condition is quite in harmony with Thorndike's present view. Nevertheless, all of his recent work and writings tend to support the notion that rewards usually are more effective for learning than are punishments, and that from the viewpoint of 'effect,' positive guidance should be superior to negative guidance as a means of learning.

Thus far we have made little mention of the behavior of the subjects themselves. However, the superiority of positive guidance to negative guidance must be largely dependent upon the activities which these two conditions induce in the subjects during the course of the experiment. For example, probably a subject will profit more if he says to himself, "I must remember this" or "that number is correct"—an attitude which positive guidance favors, than if he says, "I must not do that," or "that number is wrong"—a type of self-instruction which negative guidance tends to produce. In addition the subject typically tries to recall his behavior on previous trials, his responses to

previous stimuli. It seems likely that positive guidance facilitates the recall of correct responses, whereas negative guidance may increase the likelihood of recalling incorrect ones. The recall of an error may be advantageous if the subject also remembers that it was an error; but, as Porter's[4] discussion suggests, a wrong response may be recalled without an accompanying recognition of its wrongness. In such a case the error is likely to be repeated and the selection of the correct response to be hindered correspondingly. Finally, as Porter also points out, the 'emphasizer-right' or positive guidance method conforms better with previously established habits. In the 'emphasizer-wrong' method the subject must learn to choose that which is not emphasized, as if he were asked to look to the right but point to the left. Apparently some of Porter's subjects found this act so difficult that they were unable to refrain from pressing the wrong key when it was emphasized even though they knew it was the wrong one.

Regardless, however, of whether we can explain why positive guidance should be superior to negative as a condition of learning, the results both of previous studies and of the present experiment strongly suggest that learning is more effectively accomplished if the correct responses rather than the incorrect ones are pointed out and emphasized. Indeed, it is possible that often it is unwise to call any attention whatever to errors since such attention may actually tend to fixate them. Instead, when a wrong response has been made, it may often be best to overlook it entirely and have the correct response made and emphasized at once. Porter and Hall[5] believe that "a wrong response should be followed up with emphasis upon the correct stimulus instead of calling attention to the incorrect stimulus." In many instances it is likely that methods of teaching could be significantly improved and the learning of students greatly facilitated if such suggestions were more generally adopted.

## SUMMARY AND CONCLUSIONS

The aim of the present experiment was to compare the effects of positive and negative guidance upon maze learning in children. The subjects numbered sixty-four, varying in ages from six to ten and in grades from I*A* to VI*A*. Thirty-five of them were girls and twenty-nine were boys. Each subject learned three punchboard mazes under three different conditions: a pre-

liminary practice, learning with positive guidance, and learning with negative guidance. The mazes used for the above three conditions were rotated in order to control the factor of possible difference in difficulty. The two guidance conditions also were rotated so that half of the subjects learned first under the condition of positive guidance, and the remaining half learned first under the condition of negative guidance. The three conditions were presented at intervals of one week. The results were that learning with positive guidance was superior to learning with negative guidance according to all three criteria of errors, trials and time for the group as a whole, for all age groups, for all maze length groups, and for boys and girls considered separately. The above findings are in agreement with those of the other punchboard maze experiments and also with those of Porter and of Porter and Hall. Therefore, it may be concluded that for children as well as adults positive guidance is superior to negative guidance as a condition of maze learning.

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# A STUDY OF THE OCCUPATIONAL INTERESTS OF HIGH-SCHOOL STUDENTS IN TERMS OF GRADE PLACEMENT

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During the past few years the school has exhibited a growing interest in the vocational future of its students. This trend has been demonstrated by a greater emphasis on such activities as vocational guidance, student counseling, and courses in careers. Educators generally appear to show a greater concern for sound vocational choices among our secondary-school youth than previously. Nevertheless, the school apparently has failed to go very far toward meeting this objective. In fact, few studies have actually tried to evaluate the effect of the school upon the efficacy of vocational choice.

From the many studies of the vocational interest patterns of high-school students, however, one is able to realize how unreal and illusory are the choices of youth. Studies by Bedford,[1] Hyte,[2] Kilzer,[3] Witty, Garfield and Brink[4] are representative in this regard. Such studies constitute indirect evidence that the school has been relatively ineffective in stimulating students carefully and realistically to appraise their own aptitudes and the opportunities existing in the world of occupations. Only a relatively small number of studies have attempted actually to determine whether twelfth-grade students make more realistic choices than ninth- or tenth-grade students. Evidence of this kind would be more appropriate in studying the effect of attendance at school upon the soundness of vocational choice, although, of course, any differences found could not be solely attributed to the school. Two studies of this kind can be cited. Lehman and Witty[5] found that there was little change in efficacy of vocational choice (in terms of demand) with advance in chronological age. In a similar study, Witty, Garfield, and Brink[4] reported the vocational interests of over sixteen hundred high-school students in an urban area. Their results showed that the percentages for the various occupational categories did not vary greatly from grade to grade. Since there have been few studies of this kind, it has been thought worth while to make a further study of the relationship between vocational choice and grade placement among students selected from different sized communities.

## THE PRESENT STUDY

This study* was undertaken to discover what differences exist among the vocational preferences of students in grades IX to XII. In order to avoid sampling only one school system or one urban area, questionnaires were distributed to nine hundred twelve boys and ten hundred eighty-three girls in twenty-two different schools. The schools were selected from communities varying in size from less than two thousand five hundred inhabitants to communities well over fifteen thousand in population. Care was thus taken to insure a fairly representative group of subjects. In order to provide a further check, the occupations of the fathers were compared with comparable occupational classifications secured from the 1930 census. These data are presented in Table I. The sample thus appears representative although it is somewhat overweighted in the professional occupations and underweighted in the skilled and semi-skilled occupations.

TABLE I.—COMPARISON OF OCCUPATIONS OF FATHERS WITH COMPARABLE DATA FROM 1930 CENSUS

| GENERAL OCCUPATIONAL CLASSIFICATION* | PER CENT OF FATHERS IN SAMPLE | ESTIMATE BASED UPON 1930 CENSUS† |
|---|---|---|
| Professional and Managerial.... | 18.8 | 12.9 |
| Clerical and Sales..... | 11.0 | 12.8 |
| Service..... | 6.3 | 6.2 |
| Agricultural..... | 26.1 | 25.8 |
| Skilled..... | 21.8 | 16.3 |
| Semi-skilled..... | 6.7 | 14.3 |
| Unskilled..... | 9.3 | 11.7 |

* *Dictionary of Occupational Titles.* Part I, p. xxiii.

† These percentages are based upon the number of males engaged in the occupational groups since the occupations of the fathers were used.

## RESULTS

The vocational preferences of the boys and girls in grades IX through XII are indicated in Tables II and III. Only occupa-

* This study is part of a Doctoral dissertation completed at Northwestern University by Dr. Roeber.

tions selected by more than one per cent of the students are listed. In only a few instances did a subject list more than one occupational choice. The results will be discussed separately for each sex.

*Occupational Preferences of Boys.*—It can be observed from Table II that certain differences exist between the preferences for the various grades, although the most favored choices are generally similar for each grade. Farming is the most popular single choice of all groups, but is selected twice as frequently among ninth-grade boys as among eleventh- or twelfth-grade boys. This occupational preference is of considerable interest in itself, since it differs from the favored occupation reported in several other studies. The variance may be accounted for largely in terms of the population samples utilized by the various investigators. This, however, constitutes another problem and cannot be discussed here.*

Engineering and aviation are other occupations which are selected rather frequently by boys in all the grades. Approximately ten per cent of the boys in grades IX, X and XII chose engineering as their preferred occupation while seven per cent in grade XI chose this occupation. There was not the same consistency, however, in the choice of aviator. It was among the first three favored occupational choices in grades IX, X, and XI, but was ranked fifth by the twelfth-grade boys, being selected by only four and three-tenths per cent. In this occupation, therefore, the twelfth-grade boys differed from the rest. This may or may not be due to a more realistic outlook on the part of the senior boys.

Certain interesting findings are also apparent in regard to some of the other vocational choices. In such occupations as mechanic, army-navy, medicine and surgery, clerk, musician, electrician, and carpenter there are only slight differences between the percentages for the various grades. With the exception of mechanic and army-navy, however, these occupational categories were selected by only a small percentage of the boys. The preferences for medicine-surgery and carpenter showed a steady decline in percentage from grades IX to XII while the choices for store clerk ranged in the opposite direction—

* This problem is treated at length in a forthcoming article by the present writers.

but the differences between the grades were so slight for these occupational groups that they are probably of no significance. On the other hand, the choices for certain other occupations

TABLE II.—OCCUPATIONAL CHOICES OF HIGH-SCHOOL BOYS IN GRADES IX–XII

| Occupations | Percentage | | | |
|---|---|---|---|---|
| | 9th Grade | 10th Grade | 11th Grade | 12th Grade |
| Farmer | 24.6 | 14.6 | 10.2 | 11.6 |
| Engineer | 9.1 | 10.6 | 6.8 | 10.1 |
| Aviator | 8.6 | 14.1 | 9.8 | 4.3 |
| Mechanic | 5.0 | 5.5 | 4.3 | 3.9 |
| Army-Navy | 4.1 | 3.5 | 5.1 | 2.7 |
| Machinist | 2.7 | 4.0 | 5.1 | 3.9 |
| Medicine-Surgery | 2.7 | 2.5 | 2.1 | 1.9 |
| Carpenter | 2.3 | 2.0 | 1.7 | 1.6 |
| Store Clerk | 1.8 | 2.0 | 2.6 | 2.7 |
| Draftsman | 1.8 | 2.5 | 3.4 | 3.9 |
| Accountant | 1.8 | 2.0 | 3.0 | 3.5 |
| Lawyer | 1.8 | 1.0 | 2.6 | 1.6 |
| Electrician | 1.4 | 1.5 | 1.7 | 1.2 |
| Musician | 1.4 | 1.0 | 0.0 | 0.0 |
| Teacher | 0.9 | 4.0 | 1.7 | 1.6 |
| Factory Worker | 0.9 | 2.5 | 4.7 | 5.4 |
| Journalism | 0.9 | 0.0 | 1.3 | 0.8 |
| Office Clerk | 0.5 | 0.5 | 2.1 | 3.1 |
| Commercial Artist | 0.5 | 0.5 | 1.3 | 1.2 |
| Tool and Die Maker | 0.5 | 1.0 | 1.3 | 5.4 |
| Chemist | 0.5 | 3.0 | 0.4 | 1.9 |
| Salesman | 0.0 | 1.0 | 2.5 | 4.0 |
| Designer | 0.0 | 0.0 | 0.0 | 2.7 |
| *N* = | 220 | 199 | 235 | 258 |

indicated certain trends which may be of some importance. In the occupations designated draftsman, accountant, factory worker, office clerk, tool and die maker, and salesman, there was

a definite increase in preference as grade placement increased. These occupations were selected much more frequently by boys in grades XI and XII than in grades IX and X, although none of the percentages for the occupations were very large. Nevertheless, it is worth noting that, whereas less than one per cent of the ninth-grade boys preferred the occupation of factory worker or of tool and die maker, over five per cent of the twelfth-grade boys preferred each of these occupations. The latter were actually ranked third by the twelfth-grade boys. This trend would seem to indicate a more realistic attitude toward work on the part of the seniors than the freshmen. Whether this can be received as a sign of maturity or as a result of publicity in terms of war production can not be stated with any degree of certainty. Although temporally the seniors are much closer to the world of work than are the freshmen, the latter might also be influenced by war, rumors and publicity. The fact that there is a trend for seniors to select more frequently occupations which are 'non-glamorous,' however, would seem to indicate that the factor of maturity does play some part in these choices. Ostensibly the effect of the school upon these choices would appear to be slight, since they are selected by a minority of the twelfth-grade students.

*Occupational Preferences of Girls.*—The vocational choices of the girls were not as numerous as those of the boys. The choices of the former were more heavily concentrated on a few occupations. Only fourteen occupations were selected by more than one per cent of the girls as contrasted with the twenty-three occupations thus selected by the boys. In this respect and in the fact that three occupations selected by the girls received a majority of the preferences, this study is in essential agreement with many others. There is usually a greater diversity among the vocational choices of boys than among girls.

The three occupational groups which account for most of the choices are the three which most often have been reported in other studies as being the most popular among high-school girls. The occupations were: (1) stenography and office work, (2) nursing, and (3) teaching. As can be seen in Table III, the percentages for the three occupations vary comparatively little from grade to grade. The frequency of choices for stenography is less in the eleventh grade than in the other grades, while the

percentage of preferences for teaching is smaller for the ninth grade than for the other grades. The differences appear relatively unimportant, however, for the trend is similar in all grades —the three occupations were ranked one, two, and three in each grade. The only other occupation which was selected by more than five per cent of the girls was that of beautician. The latter was selected by five and nine-tenths of the girls in grade X and nine and nine-tenths of the girls in grade XI. In the most favored occupations, therefore, there were no important differences between the students in the different levels of our secondary school.

TABLE III.—OCCUPATIONAL CHOICES OF HIGH-SCHOOL GIRLS IN GRADES IX–XII

| Occupations | Percentage | | | |
|---|---|---|---|---|
| | 9th Grade | 10th Grade | 11th Grade | 12th Grade |
| Stenographer-Office Worker | 33.4 | 33.3 | 25.8 | 36.1 |
| Nurse | 17.4 | 17.0 | 17.4 | 15.8 |
| Teacher | 8.0 | 13.3 | 13.3 | 12.3 |
| Beautician | 4.2 | 5.9 | 9.9 | 3.2 |
| Commercial Artist | 3.8 | 3.3 | 3.0 | 2.8 |
| Housework | 3.8 | 1.9 | 2.3 | 2.1 |
| Journalism | 2.7 | 3.0 | 1.9 | 1.8 |
| Designer | 2.3 | 3.0 | 3.0 | 2.5 |
| Musician | 2.3 | 3.3 | 1.9 | 2.1 |
| Factory Worker | 1.9 | 1.1 | 2.7 | 4.2 |
| Waitress | 1.5 | 0.4 | 1.1 | 3.2 |
| Store Clerk | 1.1 | 2.6 | 4.9 | 4.2 |
| Telephone Operator | 0.4 | 1.9 | 0.4 | 2.5 |
| Actress | 0.0 | 1.1 | 3.0 | 0.7 |
| $N$ = | 264 | 270 | 264 | 285 |

Little of importance remains to be said of the other vocational choices although certain trends are observable in some occupations. There is a small decrease in preference for journalism and commercial art with increase in grade placement. The differ-

ences, however, are so small as to be of questionable significance. On the other hand, in the occupational categories designated factory worker, store clerk and waitress, there is evident a greater frequency of choices among the two higher grades than the lower ones. Although the percentages in all cases are less than five, the frequencies in the twelfth grade are over twice as large as the frequencies in the ninth grade. Furthermore, the occupations of factory worker and store clerk were each selected by four and two-tenths of the twelfth-grade girls and thus occupied fourth rank among their preferred occupations. Thus there appears to be a trend among the girls, although small, which is similar to that of the boys and indicates that upper-class students choose some of the commonplace occupations more frequently than students in the lower grade.

## SUMMARY AND CONCLUSION

A vocational preference inventory was administered to nineteen hundred ninety-five students in grades IX to XII selected from communities of varying sizes. Generally, the most favored occupations were accorded much the same rank among the different grade levels. This was particularly true of the three most frequently selected choices among the girls. The findings are in agreement with other similar studies with the exception that the most favored choice of the boys—farming—is somewhat atypical. The latter can be accounted for in terms of sampling problems, previous studies relying on populations from urban areas.

While there were only slight differences between the grades with regard to the most favored occupational choices, certain differences among some of the less-favored occupations were of interest. There appeared to be a fairly distinct trend toward the more frequent selection by upper-classmen of occupations which are non-professional. Most studies have shown that the occupational choices of secondary-school students are concentrated in occupations of a professional nature. To the extent that students in the eleventh and twelfth grades tend to select occupations outside of the professions we have evidence of a more mature and realistic point of view. The fact that such trends are limited implies that the secondary school has a definite responsibility for helping students look at occupations realisti-

cally. When we find that the choices of seniors differ only slightly from those of freshmen, and that the hopes of both groups are in great measure illusory, we can infer that the school has been relatively ineffective in the vocational guidance of its students.

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# A FACTOR ANALYSIS OF THE PURDUE RATING SCALE FOR INSTRUCTORS

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## INTRODUCTION

'Common sense' and the sciences of psychology and psychiatry agree that of all the instrumentalities provided at public expense the teacher is the most important factor in the school situation with respect to the educational growth and adjustment of pupils. This is true whether one conceives the functions of the teacher in the narrower sense of teaching only subject-matter or whether one conceives these functions in the broader sense of the school's concern with the whole pupil personality—physically, mentally, emotionally, and socially. It is a widely accepted common-sense belief that the child's learning is conditioned by how much the teacher knows (subject-matter) and, perhaps to a considerably lesser extent, by the personality traits of the teacher and the extent to which a favorable psychological relationship exists between teacher and pupil. It is the teacher who arranges the formal learning situations for the pupils. It is the teacher also who molds the growing personalities in countless ways through the impact of his personality upon that of the pupils. During the school year the pupil spends more 'awake' time with the teacher than with his parents.

Any modern evaluation of a teacher and his teaching will, therefore, include what the pupils think of his teachers and how they feel about him as a personality. One such evaluation was used with forty practice-teachers in one of our eastern teacher-training colleges, as a guidance device in which the teachers were allowed to study the pupils' ratings of them individually and to improve as a result of knowing their respective specific limitations and assets according to this criteron.

The measuring instrument employed was The Purdue Rating Scale for Instructors. Within a frame of reference operationally

defined as measurement of a teacher by a rating-scale technique, we can thus name and describe the basic teacher traits.

The Rating Scale was originally constructed after an analysis of the rather extensive literature on personal qualities related to success in teaching, and in the light of the following criteria.

"(1) The number should be relatively small so that the student shall not be lost in the maze of different qualities. The well-known 'halo effect' which is partly due to too long a list of traits we have found to be almost wholly absent in our rating scale. The actual coefficient of correlation between any two given traits is found to be in most cases unusually low in comparison with published data on other rating scales. The list of traits must also be short enough that the student shall not be bored to the point of carelessness by the process. (2) The traits must be such as are generally agreed upon by competent critics as most important or at least among the most important ones. (3) The traits must be of such nature that they are fairly susceptible to student observation and judgment."[1]

For a discussion of the validity and reliability of the Purdue Rating Scale for Instructors the reader is referred to a study by Stalnaker and Remmers.[2]

The ten traits comprising the Purdue Rating Scale for Instructors are judged by the student on a graphic rating scale and are as follows:

1. Interest in Subject
2. Sympathetic Attitude toward Students
3. Fairness in Grading
4. Liberal and Progressive Attitude
5. Presentation of Subject-Matter
6. Sense of Proportion and Humor
7. Self-reliance and Confidence
8. Personal Peculiarities
9. Personal Appearance
10. Stimulating Intellectual Curiosity

It is common knowledge that teacher security of tenure is dependent upon subjective evaluations by teacher employers

[1] Brandenburg, G. C. and Remmers, H. H.: *Manual for the Purdue Rating Scale for Instructors*, Lafayette, Indiana; Lafayette Printing Company, pp. 31.

[2] Stalnaker, J. M. and Remmers, H. H.: "Can Students Discriminate Traits Associated with Success in Teaching?" *Journal of Applied Psychology*, Vol. XII, No. 6, pp. 602–610, December, 1928.

whose criteria are found to include, usually less nicely defined, one, several, or all of the ten items on the Purdue Rating Scale for Instructors. It is probable that the ten items invariably encompass teacher-employment criteria (with the possible exceptions of political affiliation, religious denomination and health). If it were possible to persuade teacher employers to learn the significance and simplicity of the primary teacher abilities as here defined and to apply them with constant weights to each teacher applicant, it is reasonable to assume that teaching would be improved.

Knowing the primary abilities, one can devise tests to measure them before a person is led or misled into becoming a teacher.

TABLE I.—ITEM INTERCORRELATIONS, PURDUE RATING SCALE FOR INSTRUCTIONS

| | | Traits | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| | Item | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 |
| Traits | 1 | .561 | .616 | .663 | .722 | .616 | .708 | .780 | .427 | .730 |
| | 2 | | .769 | .638 | .377 | .616 | .359 | .614 | .593 | .596 |
| | 3 | | | .724 | .389 | .539 | .338 | .716 | .722 | .543 |
| | 4 | | | | .553 | .639 | .505 | .612 | .656 | .565 |
| | 5 | | | | | .727 | .884 | .694 | .316 | .635 |
| | 6 | | | | | | .692 | .676 | .548 | .602 |
| | 7 | | | | | | | .678 | .292 | .609 |
| | 8 | | | | | | | | .631 | .719 |
| | 9 | | | | | | | | | .441 |

The intercorrelations of the ten items of the Rating Scale are shown in Table I. The *N* with which each intercorrelation was obtained is 40. Each constituent of this *N* of 40 represents the composite ratings of from twenty to thirty-five high-school students for each teacher and, of course, for each teacher trait.

Thurstone's[1] method of factor analysis was used for teasing out, statistically, the primary teacher traits. The loading of each trait with the respective primary factors is shown in Table II.

[1] Guilford, J. P.: *Psychometric Methods.* New York: McGraw-Hill Book Co., Inc., 1935, pp. 478–513.

The ten traits of the Rating Scale were found to measure varying amounts of two unique, basic teacher traits or factors. Factor I we have named the Empathy Trait and Factor II, the Professional Maturity Trait. The meaning of each basic trait can be enlarged. Empathy, it would seem, includes the ability and willingness to wear each student's "sensorial and emotional shoes." This trait surely includes minute-by-minute recognition of individual differences; interest in child learning, indeed, Empathy embodies pupil-centered teaching.

TABLE II.—FACTOR LOADINGS

| ITEM | FACTOR I | FACTOR II | COMMUNALITY |
|---|---|---|---|
| 1 | .76 | .43 | .763 |
| 2 | .29 | .77 | .671 |
| 3 | .23 | .88 | .827 |
| 4 | .40 | .73 | .693 |
| 5 | .89 | .22 | .840 |
| 6 | .69 | .46 | .688 |
| 7 | .89 | .18 | .824 |
| 8 | .72 | .53 | .799 |
| 9 | .17 | .79 | .643 |
| 10 | .67 | .44 | .643 |

Professional Maturity, in its nicest meaning, could include a classroom containing no pupils—just a teacher. However, this teacher would need to believe there were pupils in the room. This trait would include, then, ability to learn subject-matter (intelligence?); subject-matter teaching effectiveness; self-mastery; ability to sustain interest in the "tools of the trade," as it were, etc.

The items which have the greater saturation or loading of Empathy are Fairness in Grading (.88); Personal Appearance (.79); Sympathetic Attitude toward Students (.77) and Liberal and Progressive Attitude (.73). The items which have the greater loading of Professional Maturity are Self-reliance and Confidence (.89) and Presentation of Subject-matter (.89). The remaining four items of the Rating Scale are saturated less with each basic factor but measure more nearly equal amounts of each than is characteristic of the foregoing six traits, *viz.*, Interest in Subject correlates .76 with Professional Maturity and .43

with Empathy; Sense of Proportion and Humor correlates .69 with Professional Maturity and .46 with Empathy; Personal Peculiarities (freedom from) correlates .72 with Professional Maturity and .53 with Empathy; Stimulating Intellectual Curiosity correlates .67 with Professional Maturity and .44 with Empathy.

In summary, ratings obtained by means of the Purdue Rating Scale for Instructors were factor-analyzed from the table of intercorrelations shown above. Two factors were found to account for the table of intercorrelations. These two basic factors were named Empathy and Professional Maturity.

# A BINOCULAR READING TEST

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In an earlier article we described the experimental edition of a Binocular Reading Test[4,5] which is intended to function in the measurement of eye preference, or reading performance of each eye in a binocular reading situation. Two such tests are available, one of which is reproduced below.

| My Red Car | My Big Car |
|---|---|
| My red car not go. | My big car can go. |
| See big car | See my red car |
| not go away | can go now |
| The red car broken | The big car is broken here |
| The big man has fixed | The tall man fixed |
| the red car now | big car |
| The red car | The big car |
| go now | can go way |
| I will go in big car | I go the red car |
| My red car | My big car and I |
| will go home now | go home |

It is apparent that when placed in a telebinocular or stereoscope these paragraphs would form a continuous story, the spaces on either side being filled by the words on the opposite half. In each paragraph offered to an eye, there are twenty key words which do not appear before the other eye. Thus, the test actually gives each eye different material to read. If there is any tendency to read monocularly, it immediately becomes apparent by the omission of the key words of the other paragraph.

We have now administered the test to some sixty children of the elementary-school levels and attempted to interpret the results. The validity of the test can be demonstrated in several ways. We know from the work of Gray[1] and Robinson[3] that some children tend to show definite single-eye preference by reading better with one eye than with the other or than with both eyes. Our test gives similar indications. Of sixty-five cases, sixty-eight per cent showed little or no difference between single-eye performances or, in other words, exhibited no decided

eye preference in the Binocular Reading Test. The remainder showed varying degrees of preference ranging from ten per cent to one hundred per cent, or from slightly greater use of one eye to absolute disuse of one eye. The average pupil shows little preference, while a few evidence marked monocular tendency.

A further proof of the accuracy of the test in detecting eye preference is found in the relationship between eye preference as shown in the Binocular Reading Test and reading efficiency. To determine reading efficiency of the separate eyes, the pupils were given one of the sets of paragraphs of Gray's Oral Reading Check Tests,[2] paragraph 1 being read with the right eye, paragraph 2 with the left, and paragraph 3 with both eyes.* We found the median difference between the reading with the right and left eyes to be 7.35 seconds and 2.35 errors for fifty-five cases. Unless one of the differences in reading efficiency of the separate eyes was greater than one of these median differences, no best performance was designated. In other words, before attempting to find the relationship between eye preference and eye efficiency in reading, we believe that there should be more than average difference between the two eyes either in preference or rate and errors before one eye was designated as the preferred or more skillful eye.

The *C* between eye preference and reading ability of the separate eyes was .389. The highest possible *C* in a $3 \times 3$ arrangement would be .816. Therefore, as we would expect to find by reason of the experiences of Gray[1] and Robinson,[3] there is a moderate association between eye preference and reading efficiency.

We experimented with various criterion scores for determining eye preference and for judging best single-eye reading performance. The highest correlations between these two elements were found in the use of the medians as criterion scores, *i.e.* eye preferences designated by a difference of more than seven per cent, and best reading performance shown by a difference greater than seven seconds or two errors. When the means were used as criterion scores for determining eye preference and single-eye reading ability, the correlations dropped to less than .200.

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* Copies of the Gray's tests which are prepared for monocular and binocular reading are procurable from the Keystone View Co., Meadville, Pa.

A greater correlation between eye preference and reading ability is hindered by certain factors. Pupils who by reason of muscular or fusional difficulties tend to read monocularly often possess equal reading skill in each eye, hence there is little association between their marked eye preference and their potential single-eye reading abilities. Other cases show marked eye preference for one eye for other reasons, despite the capacity for good reading with either eye. Gross defects of acuity or cases of marked astigmatism may show decided eye preference but little difference in single-eye reading skill. Because of the human variable involved preferences do not always express themselves in an expected, logical manner. As shown in an earlier case study,[4] some pupils actually read more poorly with the preferred eye, because of other factors, than they do with the other, relatively unused eye. Instances such as these serve to reduce the statistical relationship between eye preference and single-eye reading ability.

However, the strongest evidence for the validity of the Binocular Reading Test is found in the correlational data. We found that sixty-nine per cent of the cases who showed eye preference read significantly better with one eye than with the other. In other words, the presence of an eye preference causes significant difference in the reading ability of the separate eyes in almost three out of four cases. Still further evidence which supports the Binocular Reading Test is found in the results with children with cross-eyes or marked defect in one eye. The tendency to suspend vision in the presence of such defects is well known. It was substantiated by the Binocular Reading Test. In our four cases of strabismus and sixty per cent of our cases of marked defect there was decided monocular preference.

Estimate of the accuracy of standardization of the Binocular Reading Test is possible in an analysis of the errors on the key words. The number of omissions and the per cent of errors on each key word were computed. It is possible that the common tendency to make omissions in reading might conceal eye preference in that other words as well as the key words might be omitted. It was found that almost all the omissions were concentrated on the key words and that no particular word or group of words in any of the reading paragraphs was omitted with as great regularity or as often as the key words.

It is also possible that the position of the key words might cause their omissions, *i.e.*, words at the beginning or end of the lines might tend to be omitted more often. The range of errors on the key words was from three to seven per cent with the right eye and from two to seven per cent with the left eye. We would expect the omissions on each key word to average five per cent of the total omissions since there are twenty key words for each eye. The actual per cent of errors approximates this expected distribution and no relationship is apparent between the particular position of a key word and the per cent of errors.

The consistency of the Binocular Reading Test, or its reliability, can be estimated by correlations between the responses on the two tests. The number of items read with each eye was compared with the number read with the same eye in a second test. The correlation between the two performances with the right eye was .98; for the left eye, it was .770. Apparently there is a considerable similarity between the performances on the two tests of the average pupil, particularly with respect to the right eye.

The values of the Binocular Reading Test lie in its power to discover the relative participation of each eye in a binocular reading situation and to measure the extent of any preference. It is highly important to determine the extent of monocular preference in strabismus, muscle imbalance, or other gross defects which tend to result in loss of binocular coördination, as these are commonly associated with less than normal progress in reading. Decided preference may also be present in the absence of any obvious visual defect, and thus influence the relative efficiency of the reading of each eye in a binocular situation.

The evidence of an association between eye preference and eye efficiency given here substantiates our belief in the need for an accurate test of an eye preference in a binocular situation. If, as we have shown, some readers tend to prefer one eye even to the extent of psychological occlusion of the other it is imperative to discover this tendency, particularly among retarded readers. In some instances, the situation may be the explanation for poor reading. In all cases, it should be investigated and, if found, corrected in order to forestall unfavorable hygienic results.

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# THE RELIABILITY OF THE WILKE PERSONALITY RATING SCALE

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Beginning with the year 1933 the Washington Square College (New York University) Adviser to Pre-teaching Students has been securing estimates from members of the faculty concerning certain personal characteristics of the students.* A rating scale on which the estimates are now made (Fig. 1) is substantially the same as that developed by Wilke in 1935 and subsequently reported by him to be of considerable value in the placement of students in teaching and in other positions.[7]

Approximately two months before the end of each semester, about two hundred instructors receive lists of from one to thirty-five names of pre-teaching students† enrolled in their classes, with a memorandum to the effect that at the end of the term the instructor will be asked for personality and character ratings on these particular students. Each instructor is advised to make a special effort to observe the students insofar as classroom conditions permit. Later each of the instructors receives one rating sheet for every student whose name appeared on the previous list. This regular request for student ratings results in a collection of some five to twenty reports on a given student during his years in college, all of them being immediately filed in chronological order under his name in the Adviser's Office.‡

The writer was interested in determining the reliability of the Wilke Scale, *i.e.*, the consistency of the ratings on the various character traits.§ To what extent do the instructors agree with one another in their estimates of a given student? To what

* The writer is indebted to Professor Walter H. Wilke, Adviser to Pre-teaching Students, for affording her access to his rating scale files and for several helpful suggestions.

† The average list numbers about twelve names. Large lecture classes were never included. With few exceptions instructors gave estimates of students only if they were members of classes no larger than thirty.

‡ Ratings are secured on all but first-term freshmen. The number of reports in some cases was fewer than five, occasionally one only, where the student attended the College for one year or less.

§ Wilke has determined the reliability of the 'summaries' of the rating scale evaluations but not the reliability of the individual items.[7]

## OFFICE OF ADVISER TO PRE-TEACHING STUDENTS

**The information requested on this blank will be treated confidentially. It is important, for advisory services to pre-teaching students and in supplying information to schools regarding qualifications of our graduates, that this report be as accurate as possible. Please place a check mark (✓) above the phrase which best describes your judgment concerning the five items below.**

ESTIMATE OF PROSPECTIVE TEACHERS

1. Consider how this student has impressed you with respect to refinement, appearance, poise, tact, general disposition. How does this student compare with others as to personal attractiveness?

| | | | | | | | Basis for Judgment |
|---|---|---|---|---|---|---|---|
| Very unfavorable | Unfavorable impression | Probably below average | About average | Probably above average | Favorable impression | Unusually favorable | ____adequate<br>____inadequate |

2. Consider to what extent this student has been conscientious, prompt, honest. How does this student compare with others as to reliability?

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| Very unfavorable | Unfavorable impression | Probably below average | About average | Probably above average | Favorable impression | Unusually favorable | ____adequate<br>____inadequate |

3. Consider this student's attitude toward others. Is it likely to be a handicap due to conceit and over-aggressiveness, or to undue timidity and lack of confidence? How has this student impressed you in regard to self-confidence? If your opinion is unfavorable, check one of these terms:

____aggressive
____timid

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| Very unfavorable | Unfavorable impression | Probably below average | About average | Probably above average | Favorable impression | Unusually favorable | ____adequate<br>____inadequate |

4. Consider the extent to which this student has impressed you as enthusiastic, forceful, dynamic. How does this student compare with others with respect to alertness?

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| Very unfavorable | Unfavorable impression | Probably below average | About average | Probably above average | Favorable impression | Unusually favorable | ____adequate<br>____inadequate |

5. Consider this student as a prospective teacher. On the basis of your observation, to what extent would this student's personality (not scholarship) qualify him (her) for the teaching profession?

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| Very unfavorable | Unfavorable impression | Probably below average | About average | Probably above average | Favorable impression | Unusually favorable | ____adequate<br>____inadequate |

Comments:

Date_____ Signature_____

FIG. 1.—Rating Scale for Faculty Use.

extent are their ratings stable? Accordingly, we selected at random from the files of the last five years the names of one hundred eighty-two students, the only prerequisite for their inclusion being the presence of no less than four separate personality ratings per individual judged. Actually of those selected the number of estimates varied from four to fourteen, with an average of 7.91 and SD of 1.42.

For each of the five traits rated we allowed 10 points for a checking of "very unfavorable," 20 points for "unfavorable impression," 30 points for "probably below average," 40 for "about average," 50 for "probably above average," 60 for "favorable impression," and the maximum of 70 points for "unusually favorable." If a judge checked the space between two descriptions a midway mark of 15, or 25, 35, etc. was recorded.

Reliability was computed by obtaining average rating scores for each student on each trait from the odd raters, likewise average rating scores for each student from the even raters, and then correlating these averages by the Pearson product-moment method. The Pearson $r$ having given us the reliability of the odd *vs* even judgments, we obtained an estimate of the reliability of the total number of estimates by using the Spearman-Brown formula:

$$r_{II} = \frac{2r_{\frac{1}{2}\frac{I}{II}}}{1 + r_{\frac{1}{2}\frac{I}{II}}}$$

where $r_{II}$ is the coefficient of reliability of the ratings by the entire group and $r_{\frac{1}{2}\frac{I}{II}}$ is the coefficient of reliability of the ratings of one-half the group.[1,4,5]

From Table I it will be seen that the average rating of the pre-teaching students taken as a group was close to 50 points on each of the various traits, or a "probably above average" score, and that the SD's were between 8 and 9. In other words, the middle two-thirds of the students had average trait ratings falling between "about average" and "favorable impression," indicating that in the main the ratings tended to be favorable rather than unfavorable. One may observe also from Table I that the averages of odd and those of even ratings correlated between 0.57 and 0.70, the lowest of the $r$'s having been obtained

for trait 2, *i.e.*, "conscientious, prompt, honest," and the highest for trait 5, *i.e.*, the personality as a whole particularly in relation to the teaching profession. The reliability of the total number of estimates ranged from 0.73 for trait 2 to 0.82 for trait 5. Therefore we may assume that the averages of these estimates

TABLE I.—AVERAGE SCORES, STANDARD DEVIATIONS, AND COEFFICIENTS OF RELIABILITY, ALIENATION, AND DEPENDABILITY OF FACULTY RATINGS ON ONE HUNDRED EIGHTY-TWO STUDENTS

| | Traits | | | | |
|---|---|---|---|---|---|
| | 1 | 2 | 3 | 4 | 5 |
| Aver. Scores | 52.16 | 53.30 | 49.51 | 49.46 | 50.92 |
| SD's | 8.49 | 8.79 | 8.64 | 8.85 | 8.88 |
| $r_{\frac{1}{2}\frac{I}{II}}$ | 0.67 | 0.57 | 0.63 | 0.64 | 0.70 |
| $r_{II}$ | 0.80 | 0.73 | 0.77 | 0.78 | 0.82 |
| $PEr_{II}$ | 0.02 | 0.02 | 0.02 | 0.02 | 0.02 |
| $k$ | 0.60 | 0.68 | 0.63 | 0.62 | 0.57 |
| $E$ | 0.40 | 0.32 | 0.37 | 0.38 | 0.43 |

The average scores were obtained by averaging the mean ratings of all students on each trait.

$r_{\frac{1}{2}\frac{I}{II}}$ indicates coefficient of correlation of averages of odd with averages of even ratings.

$r_{II}$ indicates Spearman-Brown coefficient of reliability of total ratings.

$PE_{rII}$ indicates probable error of correlation coefficient.

$k$ refers to the coefficient of alienation or measure of lack of agreement still present.

$E$ refers to the coefficient of dependability.

made on the one hundred eighty-two students will correlate not far from 0.78 with the averages of a like number of judgments of college teachers made upon them under the same circumstances. Or, using the coefficients of alienation and dependability reported in the table, we predict that one group of college instructors will agree on the average with another group regarding the presence of any one of the five traits in a given student to the extent of thirty-two to forty-three per cent better than one

would expect on the basis of chance alone. While these coefficients are amply large if the scale be used for group differentiation,[2] they are somewhat too small for significant differentiation between individuals.

By applying the Spearman-Brown prophesy formula:

$$r_{nn} = \frac{nr_{11}}{1 + (n - 1)r_{11}}$$

and substituting $r_{11} = .78$ and $r_{nn} = .90$ in the formula[1,5] and solving for $n$, we find that $n = 2.5$. Therefore we conclude that if the rating scale is to be used as a means of individual differentiation instead of an average number of 7.91 judges we should have an average number two and one-half times that large, or between nineteen and twenty judges.

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# BOOK REVIEWS

THORNTON W. MERRIAM. *Religious Counseling of College Students.* Series VI—Student Personnel Work-Number 4. Washington, D. C.: American Council on Education Studies, Vol. VII, April, 1943, pp. 77.

An important factor contributing to much of the emotional disturbance and personality maladjustment of college and university students today is the inability of the students to reconcile their adolescent religious philosophies with the hypercritical and skeptical atmosphere of campus life. The increasingly large number of students who experience such difficulty has created the need in the universities for counselors trained to aid students in resolving their religious problems.

Since the field of religious counseling and the field of clinical psychology both deal with personality adjustment, it is quite evident that they overlap a great deal. How, then, may religious counseling be differentiated from clinical psychology? Merriam categorizes an adjustment problem as religious if two questions concerning it can be answered affirmatively. These questions are: "(1) Does the problem concern the relationship of the individual to some aspect of the 'religious culture'? (2) Does the problem involve the 'ultimate loyalties' of the individual's life, on which his personality is, or ought to be, structured?" It is to Merriam's credit that even when he is trying to make a distinction between these two allied fields he does not lose sight of the contribution that clinical psychology can make to religious counseling. He consistently urges religious counselors to work in close coöperation with psychiatrists, vocational counselors, specialists in psychological tests, and with student advisors.

At present there is relatively little practical literature to aid the religious counselor in attacking student adjustment problems referred to him. By outlining some of the basic procedures that counselors in institutions of higher learning throughout the nation have found valuable in dealing with religious adjustment problems, this brochure makes an important contribution to religious counseling. In addition, the booklet offers a further aid to the counselor in the form of a bibliography that has proven useful in adapting adolescent religious philosophies to the realities of adult life.

Although higher education in America had its beginnings in institutions founded and maintained by churches for the education of future clergymen, it has gradually become separated from churches until today it is almost completely divorced from them. Merriam believes that the pendulum has started to swing toward the original situation and that religion is due to return to higher education "as a critical challenge to many superficial tendencies and dogmatisms in higher education itself, and as an unsuppressible effort of the human spirit to know and to act on what is known in behalf of ideals worthy of man's ultimate allegiance."

The widespread distribution and study of this brochure would mark an important advance in the establishment of harmonious and purposeful coöperation between education and religion on a permanent basis.

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LOUIS T. BENEZET. *General Education in the Progressive College.* New York: Bureau of Publications, Teachers College, Columbia University, 1943, pp. 190.

Because they have oriented their programs toward such principles as the Progressive Education Association promotes, Sarah Lawrence, Bennington and Bard Colleges were the three Progressive institutions Benezet studied in order "to show what the controversial label comes to mean in terms of actual operations within the college program; to trace the chief curriculum changes at the colleges from their founding to the present time; and to see, finally, what the Progressive college has to offer to the problem of meeting demands for a better program of general education in the American college today."

Chapter I is an attempt to develop a better concept of the term, 'General Education,' chiefly by reference to the opinions of experts. The next three chapters described the aims, courses and method of study, evaluation and control, and admission policies of the three institutions that had been selected for study. The information about these matters was gleaned from catalogs, other publications, and conversations or correspondence with administrative and faculty personnel. No attempt was made to check what college officials said they did against what actually went on in the classrooms. This, in the judgment of the reviewer,

who has had enlightening if limited experience with publications about colleges in contrast with college practices, seems to be the fundamental weakness in the investigation. The chapters describing the three colleges are reports primarily of what they have said they do. Some recognition of this limitation was evident in one chapter (VII), "As the Teacher Sees it," which was based upon interviews with a total of forty-eight teachers. No students were interrogated, however, nor was any attention given to actual objective evidence of the effect of the Progressive colleges upon the young persons attending them. It is difficult to understand how Benezet could have hoped to answer any very fundamental questions about the curriculums of Progressive colleges (see first quoted paragraph above) without paying more attention to what the consequences are for the learners.

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MARGARET M. CONANT. *The Construction of a Diagnostic Reading Test.* New York: Bureau of Publications, Teachers College, Columbia University, 1942, pp. 156.

Defined broadly, reading should be thoughtful and critical. It is a way of learning. After an extensive discussion of this viewpoint, the author considers the testing of reading, noting characteristics of tests, the nature of validity and reliability, subject-matter, interpretation of test results and the need of comparable test forms. A diagnostic rather than a survey type of test is favored for investigating the nature of reading.

A diagnostic test, based upon the principles outlined, was constructed "to get in detail the pattern of the author's thought," and "to interpret and make a critical evaluation of material read." Subject-matter was taken from the field of the social sciences. The test was given to groups of tenth-, eleventh- and twelfth-grade students and to college freshmen.

The author contends that she has satisfactorily demonstrated the validity of the test by definition. It is later suggested that the most valid criterion of a student's reading performance may be obtained by a detailed case study of his reading problem. The reliabilities obtained failed to reach the standard set, *i.e.*, +.94. Abilities measured in the subtests were distinctly related.

Also the correlations with other reading tests and general aptitude were substantial. Factor analysis indicated that 'general comprehension' accounted for about seventy-one per cent of the variance. These data "suggest that there is a group tendency for individuals to show the same general patterns of ability." Value of the test for diagnostic purposes and as a teaching device are noted.

The development of this test and the analysis of results reveal careful planning and critical insight. More questions are raised than are answered. Admittedly, additional research must be completed before the test is suitable for individual diagnosis. The case-study technique suggested for establishing a valid criterion of reading status appears promising. The author, however, is probably over-optimistic about having established validity of the test by definition. Furthermore, with the material and procedures employed, she is not justified in even the tentative conclusions concerning 'reading ability' *versus* 'reading abilities.'

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University of Minnesota.

J. LOUISE DESPERT. *Preliminary Report on Children's Reactions to the War.* New York: Cornell University, Medical College, 1942, pp. 102.

No program of civilian morale can be adequate without a consideration of children's reactions to wartime influences. Studies concerning children's reactions to the war, therefore, can be of use to authorities in charge of civilian morale programs. The more specific knowledge concerning children's reactions to the war, available for American use, has come out of England. The English contributions as well as American contributions are surveyed in this report of a study made at the Payne Whitney Nursery School under the auspices of the Cornell University Medical College, as a phase of a larger five-year study. In this report the specific reactions to war stimulus in children who already had been subjects of investigation in a nursery school set-up are given.

Many discrepancies appear in the studies made to date. Some general conclusions, however, can be derived from these studies. One is the impression of the majority of investigators that those

in charge of the evacuation of children in England would oppose evacuation now. The general conclusion seems to be that the effects of evacuation are worse than those of bombing. Separation of children from parents brings about more problems than are solved and is responsible for more sources of conflict. Also, the consensus seems to be that nothing specifically caused by the war appears in the children. It is the children who have emotionally disturbed histories previously who again manifest symptoms in war situations. For example, in every case where anxiety in relation to the war was reported or observed, the child had previously presented an anxiety problem. The manifestations of anxiety reviewed include: clinging to mother, repetitive questioning, increased activity, irritability and motor restlessness, nightmares, and vomiting. Psychiatrically, the anxious child seems to be insecure in his relation to one or both parents. The secure child has confidence in his parents' love and their ability to deal with danger. These are some of the more interesting conclusions arrived at in this preliminary report.

In the light of these findings, the author has certain recommendations for American use. Evacuation is not advised since repeated and successive bombings such as received in England are not conceivable in the United States, and the one lesson that should be applied is that the direct challenge of a reality situation, however painful, brings about more wholesome results than the doubts and indecision arising out of alternate solutions. Wherever possible, the unity of the family is advisable to preserve, and under no circumstances should children under five be separated from their mothers. Stable persons for group leadership necessary for dealing with children are advised, and suggestions for further research are made.

This report should be of value to investigators who wish to follow up this problem as well as to child welfare experts who are concerned with child conservation programs. H. MELTZER.

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